



WPDES PERMIT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
**PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE
ELIMINATION SYSTEM**

MADISON METROPOLITAN SEWERAGE DISTRICT

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility
located at

1610 Moorland Rd, Madison, WI

to

Badfish Creek (Lat: 42.97119° N / Long: 89.35259° W) in the Lower Rock River Basin in Dane County

in accordance with the effluent limitations, monitoring requirements and other conditions set
forth in this permit.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit, according to Chapter NR 200, Wis. Adm. Code, at least 180 days prior to the expiration date given below.

State of Wisconsin Department of Natural Resources
For the Secretary

By _____
Lisa Creegan
Wastewater Field Supervisor

Date Permit Signed/Issued

PERMIT TERM: EFFECTIVE DATE - April 01, 2026

EXPIRATION DATE - March 31, 2031

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1 Influent Requirements

1.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
701	Influent: 24-hour flow proportional composite samplers located prior to screening and grit removal at each of the five force mains at headworks building. Results are reported on a flow weighted basis. Flow is measured by 5 venturi flow meters one on each force main into the plant.

1.2 Monitoring Requirements

The permittee shall comply with the following monitoring requirements.

1.2.1 Sampling Point 701 - INFLUENT TO PLANT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD ₅ , Total		mg/L	Daily	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	Daily	24-Hr Flow Prop Comp	
Cadmium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Monthly	24-Hr Flow Prop Comp	See the Mercury Monitoring section.

1.2.1.1 Total Metals Analyses

Measurements of total metals and total recoverable metals shall be considered as equivalent.

1.2.1.2 Sample Analysis

Samples shall be analyzed using a method which provides adequate sensitivity so that results can be quantified at a level of quantitation below the calculated/potential effluent limit, unless not possible using the most sensitive approved method.

1.2.1.3 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2 In-Plant Requirements

2.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
111	In-Plant Mercury: collect a mercury field blank at the effluent building using the Clean Hands/Dirty Hands sample collection procedure excerpted from EPA Method 1669.
112	Diversion Structure: during times of wet weather, treated flow prior to disinfection is conveyed out to storage lagoons and either discharged back to east plant aeration tanks or to Nine Springs Creek tributary.

2.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

2.2.1 Sampling Point 111 - In-Plant Mercury Monitoring

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ng/L	Monthly	Blank	See the Mercury Monitoring section.

2.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2.2.2 Sampling Point 112 - Diversion Structure Nine Springs Creek

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Volume		MGD	Per Occurrence	Estimated	
E. coli		#/100 ml	Per Occurrence	Grab	

2.2.2.1 Discharge Through In-Plant Diversion Structure to Nine Springs Creek

Any discharge of wastewater through the in-plant diversion structure to Nine Springs Creek is deemed a Treatment Facility Overflow (TFO) and is prohibited. In addition to the 'Volume' and 'E. coli' monitoring requirements above, the permittee shall report any discharges through the in-plant diversion structure to Nine Springs Creek as required by the Standard Requirements section "Sewage Treatment Facility Overflows."

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The 'Volume' of the diversion and results of 'E. coli' monitoring are to be reported on the Discharge Monitoring Reports (DMRs). Monitoring is only required when there is a discharge to Nine Springs Creek; monitoring is not required for discharges back to the east plant.

3 Surface Water Requirements

3.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
001	Effluent: 24-hour flow proportional composite sampler intake located at effluent building after seasonal UV disinfection. Grab samples taken at effluent sampler prior to discharge to Badfish Creek. Flow is measured by a venturi flow meter.
601	In-stream Sampling Point 601: representative water samples shall be collected from Badfish Creek. Sample point 601 is located at the Highway 59 Bridge. (42.83359, -89.19735). Sample point 601 corresponds to the sample location 69 / BFC 8-b as described in the approved AM Plan No. AM-2025-02 (September 2025).
016	Automatically-Activated Overflow: located in City of Madison at manhole 06-102 - Drainage ditch near PS6. During times of wet weather untreated flow could be discharged to Starkweather Creek near Atwood Ave.
017	Automatically-Activated Overflow: located in City of Monona at manhole PS7 - Entrance chamber behind PS7. During times of wet weather untreated flow could be discharged to the Yahara River between Lake Monona and Mud Lake.
018	Automatically-Activated Overflow: located in City of Madison at manhole 08-100 - North side of Wingra Creek across from PS8. During times of wet weather untreated flow could be discharged to Wingra Creek near Fish Hatchery Rd.
020	Automatically-Activated Overflow: located in Town of Dunn at manhole PS11 near PS11 entrance chamber. During times of wet weather untreated flow could be discharged to Nine Springs Creek.
021	Automatically-Activated Overflow: located in City of Madison at manhole 13-105 upstream of PS13 - Along drainage ditch, west of Hwy 51 at Dane County Airport access road. Inside airport perimeter fence. During times of wet weather untreated flow could be discharged to Starkweather Creek East of airport near Hwy. 51.

3.2 Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

3.2.1 Sampling Point (Outfall) 001 - EFFL/BADFISH CREEK

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD ₅ , Total	Weekly Avg	20 mg/L	Daily	24-Hr Flow Prop Comp	
BOD ₅ , Total	Monthly Avg	19 mg/L	Daily	24-Hr Flow Prop Comp	
BOD ₅ , Total	Weekly Avg	8,340 lbs/day	Daily	Calculated	
BOD ₅ , Total	Monthly Avg	7,923 lbs/day	Daily	Calculated	

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Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Suspended Solids, Total	Weekly Avg	23 mg/L	Daily	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	20 mg/L	Daily	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	9,591 lbs/day	Daily	Calculated	Limit effective January-August and October-December.
Suspended Solids, Total	Weekly Avg	7,690 lbs/day	Daily	Calculated	Limit effective in September.
Suspended Solids, Total	Monthly Avg	6,860 lbs/day	Daily	Calculated	Limit effective in January.
Suspended Solids, Total	Monthly Avg	8,340 lbs/day	Daily	Calculated	Limit effective in February, April, June and November.
Suspended Solids, Total	Monthly Avg	8,160 lbs/day	Daily	Calculated	Limit effective in March, May and July.
Suspended Solids, Total	Monthly Avg	7,080 lbs/day	Daily	Calculated	Limit effective in August.
Suspended Solids, Total	Monthly Avg	4,600 lbs/day	Daily	Calculated	Limit effective in September.
Suspended Solids, Total	Monthly Avg	7,180 lbs/day	Daily	Calculated	Limit effective in October.
Suspended Solids, Total	Monthly Avg	7,170 lbs/day	Daily	Calculated	Limit effective in December.
pH Field	Daily Min	6.0 su	Daily	Grab	
pH Field	Daily Max	9.0 su	Daily	Grab	
Dissolved Oxygen	Daily Min	5.0 mg/L	Daily	Continuous	See the Compliance with DO Limit section.
Nitrogen, Ammonia (NH ₃ -N) Total	Daily Max	17 mg/L	Daily	24-Hr Flow Prop Comp	
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	10 mg/L	Daily	24-Hr Flow Prop Comp	Limit effective October-April.
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	4.4 mg/L	Daily	24-Hr Flow Prop Comp	Limit effective May-September.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	4.1 mg/L	Daily	24-Hr Flow Prop Comp	Limit effective October-April.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	1.8 mg/L	Daily	24-Hr Flow Prop Comp	Limit effective May-September.
E. coli	Geometric Mean - Monthly	126 #/100 ml	2/Week	Grab	Monitoring and limit effective March-November.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Monitoring and limit effective March-November. See the E. coli Percent Limit section. Enter the result in the eDMR on the last day of the month.

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Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Chloride	Weekly Avg	408 mg/L	Daily	24-Hr Flow Prop Comp	This is an interim limit effective year-round. See the Chloride Variance - Implement Source Reduction Measures section and the Chloride SRM (Target Value) Schedule.
Chloride		lbs/day	Daily	Calculated	Calculate the daily mass discharge of chloride in lbs/day on the same days chloride sampling occurs.
Mercury, Total Recoverable		ng/L	Monthly	Grab	See the Mercury - Pollutant Minimization Plan section and the Mercury Pollutant Minimization Summary Schedule.
PFOS		ng/L	Monthly	Grab	
PFOA		ng/L	Monthly	Grab	
Phosphorus, Total	Monthly Avg	1.0 mg/L	Daily	24-Hr Flow Prop Comp	
Phosphorus, Total	6-Month Avg	0.6 mg/L	Daily	24-Hr Flow Prop Comp	This is the current Adaptive Management interim limit which remains effective upon permit issuance until April 30, 2026.
Phosphorus, Total	6-Month Avg	0.5 mg/L	Daily	24-Hr Flow Prop Comp	This is an Adaptive Management interim limit that goes into effect May 1, 2026. See the Schedules section and effluent requirements below.
Phosphorus, Total		lbs/day	Daily	Calculated	Calculate the daily mass discharge of phosphorus in lbs/day on the same days phosphorus sampling occurs. $\text{Mass (lbs/day)} = \text{Concentration (mg/L)} \times \text{Flow (MGD)} \times 8.34$
Cadmium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nickel, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	Quarterly	Calculated	Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Acute WET		TU _a	See Listed Qtr(s)	24-Hr Time Prop Comp	Annual monitoring in rotating quarters. See the Whole Effluent Toxicity (WET) Testing section.
Chronic WET	Monthly Avg	1.0 TU _c	See Listed Qtr(s)	24-Hr Time Prop Comp	Twice annual monitoring in rotating quarters. See the Whole Effluent Toxicity (WET) Testing section.

3.2.1.1 Annual Average Design Flow

The annual average design flow of the permittee's wastewater treatment facility is 50 MGD.

3.2.1.2 Total Metals Analyses

Measurements of total metals and total recoverable metals shall be considered as equivalent.

3.2.1.3 Sample Analysis

Samples shall be analyzed using a method which provides adequate sensitivity so that results can be quantified at a level of quantitation below the calculated/potential effluent limit, unless not possible using the most sensitive approved method.

3.2.1.4 *E. coli* Percent Limit

No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 #/100 ml. Bacteria samples may be collected more frequently than required. All samples shall be reported on the monthly discharge monitoring reports (DMRs). The following calculation should be used to calculate percent exceedances.

$$\frac{\text{\textit{\# of Samples greater than 410 \#/100 mL}}}{\text{\textit{Total \# of samples}}} \times 100 = \% \text{\textit{Exceedance}}$$

3.2.1.5 Compliance with Dissolved Oxygen Limit

Dissolved Oxygen (DO) values of 4.5 mg/L or greater, as measured at Sample Point 001, will be deemed as compliant by the Department for Outfall 001 based on the results of a previous study by the permittee sent to the Department on August 18, 1999, and approved September 22, 1999. This study demonstrated that the minimum DO gain across the

Badfish Creek aerator was 0.5 mg/L. If DO levels fall below 4.5 mg/L for more than an hour and are not attributable to equipment failure, per the study, the District shall take DO measurements at the discharge to Badfish Creek.

3.2.1.6 Total Phosphorus Interim Limit, Averaging Periods and Compliance Determination

The adaptive management total phosphorus interim limit of 0.5 mg/L goes into effect May 1, 2026, beginning the averaging period from May 1, 2026, through October 31, 2026. The averaging periods are May through October and November through April. Compliance with the 6-month average limit is evaluated at the end of each 6-month period on April 30th and October 31st annually.

3.2.1.7 Phosphorus Limitation(s) and Adaptive Management Requirements

Madison Metropolitan Sewerage District (MMSD) has requested and the Department has approved a plan to implement a watershed adaptive management approach under s. NR 217.18, Wis. Adm. Code, and s. 283.13(7), Wis. Stat., as a means for MMSD to achieve compliance with the phosphorus water quality standard in s. NR 102.06, Wis. Adm. Code. The phosphorus limitations and conditions in this permit reflect the approved adaptive management plan No. AM-2025-02 (September 2025). Failure to implement terms and conditions of this section is a violation of this permit. In cooperation with the other signatories of the Intergovernmental Agreement for an Adaptive Management Plan in the Yahara Watershed, the permittee shall design and implement the actions identified in section 3 of the AM Plan No. AM-2025-02 (September 2025) in accordance with the goals and measures identified in the approved plan.

The goal for phosphorus load reductions for MMSD for this permit term is equal to 60% of the total phosphorus load reduction goal from MMSD to the watershed, according to the approved adaptive management plan. This load reduction is identified as 22,117 pounds of phosphorus per year for MMSD. If MMSD does not achieve its load reduction goal by March 31, 2031, the watershed adaptive management option may not be available to the permittee upon permit reissuance, or alternatively, the Department may request appropriate modifications to the AM Plan as a condition of permit reissuance.

Pursuant to s. NR 217.18(3)(e)2, Wis. Adm. Code, the adaptive management interim limitation is 0.5 mg/L, expressed as a six-month average. Additionally, a 1.0 mg/L limitation expressed as a monthly average is required. The final calculated water quality based effluent limitations for phosphorus are a six-month seasonal average limitation of 0.075 mg/L and a monthly average limitation of 0.225 mg/L based on current in-stream phosphorus data. These limitations may be recalculated based on changes in the in-stream data at the time of permit reissuance. There are also additional mass-based limits from the Rock River TMDL and they are listed in the table below. These limits will become effective at the end of three permit terms unless the adaptive management project is terminated per s. NR 217.18(3)(g), Wis. Adm. Code, in which case the limits may be imposed at an earlier date, or the phosphorus reductions specified in the adaptive management plan have been achieved.

Total Phosphorus Effluent Limitations

Month	Monthly Ave Total P Effluent Limit (lbs/day)
Jan	60.48
Feb	67.38
March	58.59
April	59.90
May	56.76
June	61.19
July	56.17
Aug	54.09
Sept	54.13
Oct	55.40
Nov	60.14

Month	Monthly Ave Total P Effluent Limit (lbs/day)
Dec	60.11

3.2.1.8 Additional Watershed Adaptive Management Project Requirements

Adaptive Management Plan No. AM-2025-02 (September 2025) is a partnership between several WPDES permittees and a diverse group of entities that are not WPDES permit holders. The WPDES permittees include three publicly owned treatment works (POTWs) – Stoughton Utilities, Village of Oregon, and the Madison Metropolitan Sewerage District and WI DNR Nevin Fish Hatchery and various Municipal Separate Storm Sewer Systems (MS4s) that have signed an intergovernmental agreement to guide implementation of the plan. The adaptive management plan is a means to achieve compliance with the phosphorus water quality standard in s. NR 102.06, Wis. Adm. Code, and the Rock River TMDL. As the approved plan is written, Madison Metropolitan Sewerage District shall submit surface water samples as identified in AM Plan No. AM-2025-02 (September 2025) that shall be taken in accordance with the Surface Water Sampling section below and shall submit the results as part of the annual reports on the implementation of AM Plan No. AM-2025-02 (September 2025). (See the Watershed Adaptive Management Option Annual Report Submittals Schedule).

The goal for phosphorus load reductions for this permit term within the Yahara River action area, as identified in AM-2025-02 (September 2025), shall be 60% of the total phosphorus load reduction from the combination of all four point sources (Stoughton Utilities, Village of Oregon, Madison Metropolitan Sewerage District and WI DNR Nevin Fish Hatchery). This load reduction goal is identified as 65,824 pounds of phosphorus per year from the contributing point sources in the adaptive management plan. If the load reduction goal is not met by March 31, 2031, the watershed adaptive management option may not be available to the participating permittees upon permit reissuance, or alternatively, the Department may request appropriate modifications to the AM Plan as a condition of permit reissuance.

3.2.1.9 Adaptive Management Reopener Clause

Per s. NR 217.18(3)(g), Wis. Adm. Code, the Department may terminate the adaptive management option for a permittee through permit modification or at permit reissuance and require compliance with a phosphorus effluent limitation calculated under s. NR 217.13, Wis. Adm. Code, or a US EPA approved TMDL based on any of the following reasons:

1. Failure to implement the adaptive management actions in accordance with the approved adaptive management plan and compliance schedule established in the permit.
2. New information becomes available that changes the Department's determinations made under s. NR 217.18(2), Wis. Adm. Code.
3. Circumstances beyond the permittee's control have made compliance with the applicable phosphorus criterion in s. NR 102.06, Wis. Adm. Code, pursuant to the plan's goals and measures infeasible.
4. A determination by the Department that sufficient reductions have not been achieved to timely reduce the amount of total phosphorus to meet the criteria in s. NR 102.06, Wis. Adm. Code.

3.2.1.10 Adaptive Management Requirements - Optimization

The permittee shall continue to optimize performance to control phosphorus discharges in accordance with s. NR 217.18(3)(c), Wis. Adm. Code.

3.2.1.11 Chloride Variance – Implement Source Reduction Measures

This permit contains a variance to the water quality-based effluent limit (WQBEL) for chloride granted in accordance with s. NR 106.83(2), Wis. Adm. Code. As conditions of this variance the permittee shall (a) maintain effluent quality

at or below the interim effluent limitation specified in the table above, (b) implement the chloride source reduction measures specified in the MMSD Source Reduction Initiatives 2026-2031 Pollutant Minimization Plan – Chloride, and (c) perform the actions listed in the Chloride SRM (Target Value) Schedule (see the Schedules section herein).

3.2.1.12 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wis. Adm. Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

3.2.1.13 Mercury – Pollutant Minimization Plan

The permittee shall continue to (a) maintain effluent quality at or below the current effluent concentrations, (b) continue to implement a mercury pollutant minimization plan, and (c) perform the actions listed in the Mercury Pollutant Minimization Summary Schedule (see the Schedules section herein).

3.2.1.14 PFOS/PFOA Sampling and Reporting Requirements

For grab samples, as defined per s. NR 218.04(10), Wis. Adm. Code, a single sample at a location as defined by the sample point description shall be taken during the time of the day most representative to capture all potential discharges. If extra equipment besides the sample bottle is used to collect the sample, it is recommended that a one-time equipment blank is collected with the first sample. An equipment blank would be collected by passing laboratory-verified PFAS-free water over or through field sampling equipment before the collection of a grab sample to evaluate potential contamination from the equipment used during sample. If any equipment blanks are performed, these results shall be reported in the comments section of the eDMR.

3.2.1.15 Whole Effluent Toxicity (WET) Testing

Primary Control Water for Acute Tests: A synthetic (standard) laboratory water may be used.

Primary Control Water for Chronic Tests: A standard laboratory water that has a hardness of +/- 10% of the hardness of the Yahara River above the confluence with Badfish Creek shall be used.

Effluent Sample Point Location and Type: Effluent samples shall be taken using a 24-Hour Time Proportional Composite sampler set up to sample just below the step aerator at the Badfish Creek Outfall.

Instream Waste Concentration (IWC): 100%

Dilution Series: At least five effluent concentrations and dual controls must be included in each test.

- **Acute:** 100, 50, 25, 12.5, 6.25% and any additional selected by the permittee.
- **Chronic:** 100, 75, 50, 25, 12.5% and any additional selected by the permittee.

WET Testing Frequency:

Acute tests are required annually during the following quarters:

- **Acute:** October-December 2026; April-June 2027; July-September 2028; January-March 2029; and October-December 2030

Acute WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in October-December 2031.

Chronic tests are required twice annually during the following quarters:

- **Chronic:** April-June 2026; October-December 2026; January-March 2027; April-June 2027; April-June 2028; July-September 2028; January-March 2029; July-September 2029; July-September 2030; and October-December 2030

Chronic WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in July-September 2031 and October-December 2031.

Testing: WET testing shall be performed during normal operating conditions. Permittees are not allowed to turn off or otherwise modify treatment systems, production processes, or change other operating or treatment conditions during WET tests.

Reporting: The permittee shall report test results on the Discharge Monitoring Report form, and also complete the "Whole Effluent Toxicity Test Report Form" (Section 6, "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*"), for each test. The original, complete, signed version of the Whole Effluent Toxicity Test Report Form shall be sent to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion. The Discharge Monitoring Report (DMR) form shall be submitted electronically by the required deadline.

Determination of Positive Results: An acute toxicity test shall be considered positive if the Toxic Unit - Acute (TU_a) is greater than 1.0 for either species (fathead minnow (*Pimephales promelas*) and waterflea (*Ceriodaphnia dubia*)). The TU_a shall be calculated as follows: $TU_a = 100 \div LC_{50}$. A chronic toxicity test shall be considered positive if the Toxic Unit - Chronic (TU_c) is greater than 1.0 for either species. The TU_c shall be calculated as follows: $TU_c = 100 \div IC_{25}$.

Additional Testing Requirements: Within 90 days of a test which showed positive results, the permittee shall submit the results of at least 2 retests to the Biomonitoring Coordinator on "Whole Effluent Toxicity Test Report Forms". The 90-day reporting period shall begin the day after the test which showed a positive result. The retests shall be completed using the same species and test methods specified for the original test (see the Standard Requirements section herein).

3.2.2 Surface Water Sampling

Surface water sampling shall be performed in accordance with Table 24 of the approved Adaptive Management Plan No. AM-2025-02 (September 2025), at the locations specified in Table 25 in the approved plan.

3.2.3 Sampling Point 601 - Badfish Creek at Highway 59

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		cfs	Monthly	Calculated	Provide an estimate of river flow for each day that in-stream phosphorus monitoring is performed May 1 through October 31 annually.
Flow Rate		cfs	Per Occurrence	Calculated	Voluntary river flow estimates for each day that in-stream phosphorus monitoring is performed November 1 through April 30 annually.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Phosphorus, Total		mg/L	Monthly	Grab	Collect samples monthly May 1 through October 31 annually. See permit subsections for sampling and reporting requirements.
Phosphorus, Total		mg/L	Per Occurrence	Grab	Voluntary monitoring November 1 through April 30 annually. See permit subsections for sampling and reporting requirements.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate and report total monthly phosphorus loads for the months of May through October annually. See permit subsection for calculation of total monthly loads.
Phosphorus, Total		lbs/month	Per Occurrence	Calculated	Calculated total phosphorus loads may also be reported for the months of November through April, as data is available. See permit subsection for calculation of total monthly loads.

3.2.3.1 Surface Water Sampling for Total Phosphorus and Total Suspended Solids

When sampling surface waters for total phosphorus and total suspended solids, sample collection and handling protocol as specified in Chapter 4 of the “Guidance for Implementing Wisconsin’s Phosphorus Water Quality Standards for Point Source Discharges” shall be followed. (Available at dnr.wi.gov; search for “phosphorus guidance”).

When testing for total phosphorus and total suspended solids in surface water samples, use the test procedures specified by the Sampling and Testing Procedures Standard Requirement. Analytical methods used shall enable the laboratory to quantitate total phosphorus at levels below the water quality criterion of 0.075 mg/L. If the required level of quantitation cannot be met by any of the methods available in ch. NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected.

When surface water samples are collected by Water Action Volunteers, the “The Volunteer Monitor's Guide To Quality Assurance Project Plans” shall be implemented. (Available at www.epa.gov; search for “The Volunteer Monitor's Guide To Quality Assurance Project Plans”).

3.2.3.2 Voluntary Surface Water Sampling for Total Phosphorus

River flow and total phosphorus monitoring may voluntarily be performed from November 1 through April 30 annually. When voluntary in-stream monitoring is completed, monitoring results shall be reported on the monthly eDMR. Report river flow measurements for each day phosphorus monitoring is performed.

3.2.3.3 Reporting Surface Water Sampling Results for Total Phosphorus, Total Suspended Solids and Flow

The permittee shall report total phosphorus, total suspended solids and river flow measurements in the annual report included in the Watershed Adaptive Management Option Annual Report Submittals Schedule.

In addition, all surface water samples shall be reported to the Department using the Department's Laboratory Data Entry System (LDES). Test results for the year shall be submitted by July 31, of the following year. (Available at dnr.wi.gov; search "Laboratory Data Entry System").

3.2.3.4 Total Monthly Total Phosphorus (TP) Loads

Use the following methods to calculate the total monthly phosphorus loading in the receiving stream expressed as a mass in lbs/month:

- 1) Convert mg/L to lbs/day using the following equation:

$$\text{Daily TP loading (lbs/day)} = \text{TP concentration (mg/L)} \times [\text{Daily Flow (cfs)} \div 1.55] \times 8.34$$

- 2) On a monthly basis, average the reported daily TP loading, then multiply the average by the number of days during the month and report the product as "Phosphorus, Total" (in lbs/month) for the last day of the month on the eDMR.

$$\text{Phosphorus, Total (lbs/month)} = \text{Average of daily TP loading (lbs/day)} \times \text{Number of days/month}$$

3.2.4 Sampling Point (Outfall) 016 - PS6 Flapgate; 017- PS7 Stoplog; 018- PS8 Stoplog; 020- PS11 Flapgate, and 021- Flapgate Upstream of PS13

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Volume		MGD	Per Occurrence	Estimated	
E. coli		#/100 ml	Per Occurrence	Grab	

3.2.4.1 Sanitary Sewage Overflow Structures

Sample Points 016, 017, 018, 020 and 021 are used to track potential sanitary sewage overflows from five automatic overflow structures located throughout the Madison Metropolitan Sewerage District's sanitary sewage collection system. Any discharge of untreated wastewater through any of the five overflow structures to surface water is deemed a Sanitary Sewer Overflow (SSO) and is prohibited. In addition to the "Volume" and "E. coli" monitoring requirements listed above, the permittee shall report any discharges through any of these five overflow structures to surface water as required by the Sanitary Sewage Overflows and Sewage Treatment Facility Overflows Standard Requirements section.

The estimated "Volume" of the overflow and results of the "E. coli" monitoring are to be reported on the eDMRs.

4 Land Application Requirements

4.1 Sampling Point(s)

The discharge(s) shall be limited to land application of the waste type(s) designated for the listed sampling point(s) on Department approved land spreading sites or by hauling to another facility.

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
002	Class B, Liquid, Anaerobically (mesophilic) digested, gravity belt thickened liquid biosolids. Representative samples are taken directly from Metrogro loading pumps, except PFAS samples may be taken from the gravity belt thickener.
024	Class B, Cake, Anaerobically (mesophilic) digested, gravity belt thickened, centrifuged biosolids. Representative samples are taken from the cake storage building. Monitor for Lists 1, 2, 3 and 4. Department may allow monitoring of metals (List 1) at location providing similar results (See Section 4.2.1.3). Monitoring for List 3 (pathogens) shall include Treatment Process OR Pathogen Density for compliance purposes. Monitoring shall apply only when the outfall is active.
025	Class B, Cake, Composted, Anaerobically (mesophilic) digested, gravity belt thickened, centrifuged, composted biosolids. Representative samples are taken from the composted solids in the compost pile and from storage. Monitor for List 1, 2, 3 and 4. Department may allow monitoring of metals (List 1) at location providing similar results (See Section 4.2.1.3. However, if additional sludge feedstocks other than Madison Metropolitan Sewerage District Wastewater Treatment Facility sludge are used, Section 4.2.1.3 does not apply to this outfall.). Monitoring for List 3 (pathogens) shall include Treatment Process OR Pathogen Density for compliance purposes. Monitoring shall apply only when the outfall is active. Department approval is required to activate this outfall and must be received prior to use.
011	Class A, Cake from Storage, Anaerobically (thermophilic treatment after mesophilic treatment) digested, Time-Temperature Batch, gravity belt thickened, centrifuged biosolids from storage. Monitor for Lists 1, 2, 3 and 4. Representative samples are taken at the distribution point at the Madison Metropolitan Sewerage District Wastewater Treatment Facility. Monitoring shall apply only when the outfall is active.
022	Class A, Liquid, Anaerobically (thermophilic treatment after mesophilic treatment) digested, Time-Temperature Batch, gravity belt thickened, biosolids. Collection of pathogen density required immediately after Class A treatment process. Monitor for List 3 only. Note that the Class A Sludge: Composting Process requirements in the Land Application Requirements (Standard Requirements) section may not apply if all sludge feedstocks have been determined to meet Class A treatment requirements prior to the composting treatment process. Department approval is required to activate this outfall and must be received prior to use.
023	Class A, Cake, Composted, Anaerobically (thermophilic treatment after mesophilic treatment) digested, Time-Temperature Batch, gravity belt thickened, centrifuged biosolids. Collection of pathogen density required immediately after Composting and prior to storage. Monitor for List 3, except that if additional sludge feedstocks other than those already determined to meet exceptional quality requirements are used in the compost treatment process, then the permittee shall notify the Department to activate Lists 1, 2 and 4 for this outfall. Monitoring shall apply only when the outfall is active. Department approval is required to activate this outfall and must be received prior to use.
012	Class A, Struvite Harvesting Process Solids, solids removed through treatment of wastewater side stream flow. Monitor for fecal coliform and percent solids on the final product. Class A treatment process or department approved variance from Class A treatment process required for EQ distribution.

4.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

4.2.1 Sampling Point (Outfall) 002 - Class B Anaerobically Digested Liquid; 024- Class B Anaerobically Digested Cake; 025- Class B Composted Cake

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	1/ 2 Months	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	1/ 2 Months	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	1/ 2 Months	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	1/ 2 Months	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	1/ 2 Months	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	1/ 2 Months	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	1/ 2 Months	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	1/ 2 Months	Composite	
Lead Dry Wt	High Quality	300 mg/kg	1/ 2 Months	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	1/ 2 Months	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	1/ 2 Months	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	1/ 2 Months	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	1/ 2 Months	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	1/ 2 Months	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	1/ 2 Months	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	1/ 2 Months	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	1/ 2 Months	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	1/ 2 Months	Composite	
Nitrogen, Total Kjeldahl		Percent	1/ 2 Months	Composite	
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	1/ 2 Months	Composite	
Phosphorus, Total		Percent	1/ 2 Months	Composite	
Phosphorus, Water Extractable		% of Tot P	1/ 2 Months	Composite	

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Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Potassium, Total Recoverable		Percent	1/ 2 Months	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	PCB monitoring requirements only apply to Sampling Point (Outfall) 002. Sample in 2027 as part of Priority Pollutant Scan.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	PCB monitoring requirements only apply to Sampling Point (Outfall) 002. Sample in 2027 as part of Priority Pollutant Scan.
Municipal Sludge Priority Pollutant Scan			Once	Composite	Priority Pollutant Scan monitoring requirements only apply to Sampling Point (Outfall) 002. As specified in ch. NR 215.03 (1-4), Wis. Adm. Code. Sample in 2027.
PFOA + PFOS		µg/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

Other Sludge Requirements	
Sludge Requirements	Sample Frequency
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	BiMonthly
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	BiMonthly

4.2.1.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.1.2 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.1.3 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.1.4 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), Wis. Adm. Code, is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

$$[(\text{Pollutant concentration (mg/kg)} \times \text{dry tons applied/ac}) \div 500] + \text{previous loading (lbs/acre)} = \text{cumulative lbs pollutant per acre}$$

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), Wis. Adm. Code, the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.1.5 Sludge Analysis for PCBs

The permittee shall analyze the sludge for Total PCBs one time during **2027**. The results shall be reported as "PCB Total Dry Wt". Either congener-specific analysis or Aroclor analysis shall be used to determine the PCB concentration. The permittee may determine whether Aroclor or congener specific analysis is performed. Analyses shall be performed in accordance with Table EM in s. NR 219.04, Wis. Adm. Code and the conditions specified in Standard Requirements of this permit. PCB results shall be submitted by January 31, following the specified year of analysis.

4.2.1.6 Lists 1, 2, 3, and 4

List 1 TOTAL SOLIDS AND METALS See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters	
Solids, Total (percent)	
Arsenic, mg/kg (dry weight)	
Cadmium, mg/kg (dry weight)	
Copper, mg/kg (dry weight)	
Lead, mg/kg (dry weight)	
Mercury, mg/kg (dry weight)	
Molybdenum, mg/kg (dry weight)	
Nickel, mg/kg (dry weight)	
Selenium, mg/kg (dry weight)	
Zinc, mg/kg (dry weight)	

List 2 NUTRIENTS See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters	
Solids, Total (percent)	
Nitrogen Total Kjeldahl (percent)	
Nitrogen Ammonium (NH ₄ -N) Total (percent)	
Phosphorus Total as P (percent)	
Phosphorus, Water Extractable (as percent of Total P)	
Potassium Total Recoverable (percent)	

List 3		
PATHOGEN CONTROL FOR CLASS B SLUDGE		
The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.		
The following requirements shall be met prior to land application of sludge.		
Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS or CFU/gTS	2,000,000
OR, ONE OF THE FOLLOWING PROCESS OPTIONS		
Aerobic Digestion	Air Drying	
Anaerobic Digestion	Composting	
Alkaline Stabilization	PSRP Equivalent Process	
* The Fecal Coliform limit shall be reported as the geometric mean of 7 discrete samples on a dry weight basis.		

List 4
VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O ₂ /hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.1.7 Daily Land Application Log

Daily Land Application Log		
Discharge Monitoring Requirements and Limitations		
The permittee shall maintain a daily land application log for biosolids land applied each day when land application occurs. The following minimum records must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application report requirements.		
Parameters	Units	Sample Frequency
DNR Site Number(s)	Number	Daily as used
Outfall number applied	Number	Daily as used
Acres applied	Acres	Daily as used
Amount applied	As appropriate * /day	Daily as used
Application rate per acre	unit */acre	Daily as used
Nitrogen applied per acre	lb/acre	Daily as used
Method of Application	Injection, Incorporation, or surface applied	Daily as used

* gallons, cubic yards, dry US Tons or dry Metric Tons

4.2.1.8 Sludge Monitoring for PFAS

Sampling shall occur for perfluoroalkyl and polyfluoroalkyl compounds (PFAS) listed in the table below and as indicated in sampling point sections above. Monitoring shall occur at each sample point when sludge is generated regardless of the end use (i.e. land applied, hauled to another facility, landfilled).

PERFLUOROALKYLCARBOXYLIC Acids (PFCAs)	
PFBA	Perfluorobutanoic acid
PFPeA	Perfluoropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluoroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriDA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSA's)	
PFBS	Perfluorobutane sulfonic acid
PFPeS	Perfluoropentane sulfonic acid
PFHxS	Perfluorohexane sulfonic acid
PFHpS	Perfluoroheptane sulfonic acid
PFOS	Perfluorooctane sulfonic acid
PFNS	Perfluorononane sulfonic acid
PFDS	Perfluorodecane sulfonic acid
PFDoS	Perfluorododecane sulfonic acid
TELOMER SULFONIC Acids	
4:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorohexane sulfonic acid
6:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorooctane sulfonic acid
8:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorodecane sulfonic acid
PERFLUOROOCTANCESULFONAMIDES (FOSA's)	
PFOSA	Perfluorooctane sulfonamide
NMeFOSA	N-Methyl perfluorooctane sulfonamide
NEtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROOCTANCESULFONAMIDOACETIC Acids	
NMeFOSAA	N-Methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROOCTANCESULFONAMIDOETHANOLS (FOSE's)	
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol
PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid

ADONA	4,8-dioxa-3 <i>H</i> -perfluorononanoic acid
PFMPA	Perfluoro-3-methoxypropanoic acid
PFMBA	Perfluoro-4-methoxybutanoic acid
NFDHA	Nonafluoro-3,6-dioxaheptaioic acid
CHLORO-PERFLUOROALKYLSULFONATE	
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid
11Cl-PF3OUdS	11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid
PFEESA	Perfluoro(2-ethoxyethane)sulfonic acid
TELOMER SULFONIC Acids	
3:3FTCA	3-Perfluoropropyl propanoic acid
5:3FTCA	2 <i>H</i> ,2 <i>H</i> ,3 <i>H</i> ,3 <i>H</i> -Perfluorooctanoic acid
7:3FTCA	3-Perfluoroheptyl propanoic acid

Note: If WDNR Lab Certification removes a particular compound from the reporting list above and upon receiving written communication from the department, reporting for that compound is no longer required.

4.2.1.9 Sampling and Reporting Sludge Samples for PFAS

Representative sludge samples shall be collected at each sample point as listed. At minimum, liquid sludge storage/digesters should be thoroughly mixed prior to sampling. Cake sludge samples should consist of seven equal size discrete samples and be collected from different areas and depths then composited into one sample for laboratory analysis.

Note: If additional equipment is used for collecting sludge samples (i.e., shovels, compositing buckets, bottles, etc.), then a one-time equipment blank is recommended to be collected with the first sample. An equipment blank sample is collected by passing laboratory verified PFAS-free water over or through field sampling equipment before the collection of a representative sludge sample. The equipment blank result shall be reported on the annual Sludge Characteristics Form (3400-049) in the comment section when reporting PFAS concentrations in the sludge.

The permittee shall report each of the PFAS sludge monitoring results on the annual Sludge Characteristics and Monitoring Form (3400-049) as provided by the department. The permittee shall also report the summation of PFOS and PFOA on this same form. All results shall be reported in dry weight. The annual Sludge Characteristics and Monitoring Form (3400-049) are due January 31, of the year following the collection of the sludge samples.

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the solids matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., and in accordance with s. NR 149.41, Wis. Adm. Code. The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

4.2.1.10 PFAS Land Application Requirements

The department recommends the landspreading and/or land application of sludge be done in a manner consistent with the most recent version of the [“Interim Strategy for Land Application of Biosolids and Industrial Sludges containing PFAS”](#).

4.2.2 Sampling Point (Outfall) 011 - Class A Centrifuged Anaerobic Cake Storage

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	1/ 2 Months	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	1/ 2 Months	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	1/ 2 Months	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	1/ 2 Months	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	1/ 2 Months	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	1/ 2 Months	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	1/ 2 Months	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	1/ 2 Months	Composite	
Lead Dry Wt	High Quality	300 mg/kg	1/ 2 Months	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	1/ 2 Months	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	1/ 2 Months	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	1/ 2 Months	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	1/ 2 Months	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	1/ 2 Months	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	1/ 2 Months	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	1/ 2 Months	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	1/ 2 Months	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	1/ 2 Months	Composite	
Nitrogen, Total Kjeldahl		Percent	1/ 2 Months	Composite	
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	1/ 2 Months	Composite	
Phosphorus, Total		Percent	1/ 2 Months	Composite	
Phosphorus, Water Extractable		% of Tot P	1/ 2 Months	Composite	
Potassium, Total Recoverable		Percent	1/ 2 Months	Composite	
PFOA + PFOS		µg/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

Other Sludge Requirements	
Sludge Requirements	Sample Frequency
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	BiMonthly
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	BiMonthly

4.2.2.1 Sludge Monitoring for PFAS

Sampling shall occur for perfluoroalkyl and polyfluoroalkyl compounds (PFAS) listed in the table below and as indicated in sampling point sections above. Monitoring shall occur at each sample point when sludge is generated regardless of the end use (i.e. land applied, hauled to another facility, landfilled).

PERFLUOROALKYLCARBOXYLIC Acids (PFCAs)	
PFBA	Perfluorobutanoic acid
PFPeA	Perfluroropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluoroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTTrDA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSAs)	
PFBS	Perfluorobutane sulfonic acid
PFPeS	Perfluroropentane sulfonic acid
PFHxS	Perfluorohexane sulfonic acid
PFHpS	Perfluoroheptane sulfonic acid

PFOS	Perfluorooctane sulfonic acid
PFNS	Perfluorononane sulfonic acid
PFDS	Perfluorodecane sulfonic acid
PFDoS	Perfluorododecane sulfonic acid
TELOMER SULFONIC Acids	
4:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorohexane sulfonic acid
6:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorooctane sulfonic acid
8:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorodecane sulfonic acid
PERFLUOROOCTANCESULFONAMIDES (FOSAs)	
PFOSA	Perfluorooctane sulfonamide
NMeFOSA	N-Methyl perfluorooctane sulfonamide
NEtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROOCTANCESULFONAMIDOACETIC Acids	
NMeFOSAA	N-Methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROOCTANCESULFONAMIDOETHANOLS (FOSEs)	
NMeFOSE	N-Methyl perfluorooctane sulfonamideoethanol
NEtFOSE	N-Ethyl perfluorooctane sulfonamideoethanol
PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid
ADONA	4,8-dioxa-3H-perfluorononanoic acid
PFMPA	Perfluoro-3-methoxypropanoic acid
PFMBA	Perfluoro-4-methoxybutanoic acid
NFDHA	Nonafluoro-3,6-dioxaheptaonic acid
CHLORO-PERFLUOROALKYLSULFONATE	
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid
11Cl-PF3OUdS	11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid
PFEESA	Perfluoro(2-ethoxyethane)sulfonic acid
TELOMER SULFONIC Acids	
3:3FTCA	3-Perfluoropropyl propanoic acid
5:3FTCA	<i>2H,2H,3H,3H</i> -Perfluorooctanoic acid
7:3FTCA	3-Perfluoroheptyl propanoic acid

Note: If WDNR Lab Certification removes a particular compound from the reporting list above and upon receiving written communication from the department, reporting for that compound is no longer required.

4.2.2.2 Sampling and Reporting Sludge Samples for PFAS

Representative sludge samples shall be collected at each sample point as listed. At minimum, liquid sludge storage/digesters should be thoroughly mixed prior to sampling. Cake sludge samples should consist of seven equal size discrete samples and be collected from different areas and depths then composited into one sample for laboratory analysis.

Note: If additional equipment is used for collecting sludge samples (i.e., shovels, compositing buckets, bottles, etc.), then a one-time equipment blank is recommended to be collected with the first sample. An equipment blank sample is

collected by passing laboratory verified PFAS-free water over or through field sampling equipment before the collection of a representative sludge sample. The equipment blank result shall be reported on the annual Sludge Characteristics Form (3400-049) in the comment section when reporting PFAS concentrations in the sludge.

The permittee shall report each of the PFAS sludge monitoring results on the annual Sludge Characteristics and Monitoring Form (3400-049) as provided by the department. The permittee shall also report the summation of PFOS and PFOA on this same form. All results shall be reported in dry weight. The annual Sludge Characteristics and Monitoring Form (3400-049) are due January 31, of the year following the collection of the sludge samples.

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the solids matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., and in accordance with s. NR 149.41, Wis. Adm. Code. The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

4.2.2.3 PFAS Land Application Requirements

The department recommends the landspreading and/or land application of sludge be done in a manner consistent with the most recent version of the [“Interim Strategy for Land Application of Biosolids and Industrial Sludges containing PFAS”](#).

4.2.3 Sampling Point (Outfall) 023 - Class A Composted Cake

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	1/ 2 Months	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	1/ 2 Months	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	1/ 2 Months	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	1/ 2 Months	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	1/ 2 Months	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	1/ 2 Months	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	1/ 2 Months	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	1/ 2 Months	Composite	
Lead Dry Wt	High Quality	300 mg/kg	1/ 2 Months	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	1/ 2 Months	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	1/ 2 Months	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	1/ 2 Months	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	1/ 2 Months	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	1/ 2 Months	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	1/ 2 Months	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	1/ 2 Months	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	1/ 2 Months	Composite	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Zinc Dry Wt	High Quality	2,800 mg/kg	1/ 2 Months	Composite	
Nitrogen, Total Kjeldahl		Percent	1/ 2 Months	Composite	
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	1/ 2 Months	Composite	
Phosphorus, Total		Percent	1/ 2 Months	Composite	
Phosphorus, Water Extractable		% of Tot P	1/ 2 Months	Composite	
Potassium, Total Recoverable		Percent	1/ 2 Months	Composite	
PFOA + PFOS		µg/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

4.2.4 Class A Biosolids Requirements

The following conditions apply to the land application of biosolids from the following outfalls located at the indicated permit sections: 4.2.2 Sampling Point (Outfall) 011- Class A Centrifuged Anaerobic Cake Storage and 4.2.3 Sampling Point (Outfall) 023 - Class A Composted Cake.

4.2.4.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.4.2 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.4.3 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.4.4 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

$$[(\text{Pollutant concentration (mg/kg)} \times \text{dry tons applied/ac}) \div 500] + \text{previous loading (lbs/acre)} = \text{cumulative lbs pollutant per acre}$$

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.4.5 Lists 1, 2, 3, and 4

List 1 TOTAL SOLIDS AND METALS	
See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters	
Solids, Total (percent)	
Arsenic, mg/kg (dry weight)	
Cadmium, mg/kg (dry weight)	
Copper, mg/kg (dry weight)	
Lead, mg/kg (dry weight)	
Mercury, mg/kg (dry weight)	
Molybdenum, mg/kg (dry weight)	
Nickel, mg/kg (dry weight)	
Selenium, mg/kg (dry weight)	
Zinc, mg/kg (dry weight)	

List 2 NUTRIENTS	
See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters	
Solids, Total (percent)	
Nitrogen Total Kjeldahl (percent)	
Nitrogen Ammonium (NH ₄ -N) Total (percent)	
Phosphorus Total as P (percent)	
Phosphorus, Water Extractable (as percent of Total P)	
Potassium Total Recoverable (percent)	

List 3

PATHOGEN CONTROL FOR CLASS A SLUDGE

The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.

The following requirements shall be met prior to land application of sludge.

Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS	1000
OR		
Salmonella	MPN/4gTS	3
AND, ONE OF THE FOLLOWING PROCESS OPTIONS		
Temp/Time based on % Solids	Alkaline Treatment	
Prior test for Enteric Virus/Viable Helminth Ova	Post test for Enteric Virus/Viable Helminth Ova	
Composting	Heat Drying	
Heat Treatment	Thermophilic Aerobic Digestion	
Beta Ray Irradiation	Gamma Ray Irradiation	
Pasteurization	PFRP Equivalent Process	
* The Fecal Coliform concentration shall be reported as discrete samples on a dry weight basis consistent with 40 CFR 503. Collect 7 samples each sampling period.		

List 4

VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O ₂ /hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.4.6 Daily Land Application Log

Daily Land Application Log		
Discharge Monitoring Requirements and Limitations		
The permittee shall maintain a daily land application log for biosolids land applied each day when land application occurs. The following minimum records must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application report requirements.		
Parameters	Units	Sample Frequency
DNR Site Number(s)	Number	Daily as used
Outfall number applied	Number	Daily as used
Acres applied	Acres	Daily as used
Amount applied	As appropriate * /day	Daily as used
Application rate per acre	unit */acre	Daily as used
Nitrogen applied per acre	lb/acre	Daily as used
Method of Application	Injection, Incorporation, or surface applied	Daily as used

*gallons, cubic yards, dry US Tons or dry Metric Tons

4.2.4.7 Sludge Monitoring for PFAS

Sampling shall occur for perfluoroalkyl and polyfluoroalkyl compounds (PFAS) listed in the table below and as indicated in sampling point sections above. Monitoring shall occur at each sample point when sludge is generated regardless of the end use (i.e. land applied, hauled to another facility, landfilled).

PERFLUOROALKYLCARBOXYLIC Acids (PFCAs)	
PFBA	Perfluorobutanoic acid
PFPeA	Perfluroropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluroroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTTrDA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSAs)	
PFBS	Perfluorobutane sulfonic acid
PFPeS	Perfluroropentane sulfonic acid
PFHxS	Perfluorohexane sulfonic acid
PFHpS	Perfluoroheptane sulfonic acid

PFOS	Perfluorooctane sulfonic acid
PFNS	Perfluorononane sulfonic acid
PFDS	Perfluorodecane sulfonic acid
PFDoS	Perfluorododecane sulfonic acid
TELOMER SULFONIC Acids	
4:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorohexane sulfonic acid
6:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorooctane sulfonic acid
8:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorodecane sulfonic acid
PERFLUOROOCTANCESULFONAMIDES (FOSAs)	
PFOSA	Perfluorooctane sulfonamide
NMeFOSA	N-Methyl perfluorooctane sulfonamide
NEtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROOCTANCESULFONAMIDOACETIC Acids	
NMeFOSAA	N-Methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROOCTANCESULFONAMIDOETHANOLS (FOSEs)	
NMeFOSE	N-Methyl perfluorooctane sulfonamideoethanol
NEtFOSE	N-Ethyl perfluorooctane sulfonamideoethanol
PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid
ADONA	4,8-dioxa-3H-perfluorononanoic acid
PFMPA	Perfluoro-3-methoxypropanoic acid
PFMBA	Perfluoro-4-methoxybutanoic acid
NFDHA	Nonafluoro-3,6-dioxaheptaonic acid
CHLORO-PERFLUOROALKYLSULFONATE	
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid
11Cl-PF3OUdS	11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid
PFEESA	Perfluoro(2-ethoxyethane)sulfonic acid
TELOMER SULFONIC Acids	
3:3FTCA	3-Perfluoropropyl propanoic acid
5:3FTCA	<i>2H,2H,3H,3H</i> -Perfluorooctanoic acid
7:3FTCA	3-Perfluoroheptyl propanoic acid

Note: If WDNR Lab Certification removes a particular compound from the reporting list above and upon receiving written communication from the department, reporting for that compound is no longer required.

4.2.4.8 Sampling and Reporting Sludge Samples for PFAS

Representative sludge samples shall be collected at each sample point as listed. At minimum, liquid sludge storage/digesters should be thoroughly mixed prior to sampling. Cake sludge samples should consist of seven equal size discrete samples and be collected from different areas and depths then composited into one sample for laboratory analysis.

Note: If additional equipment is used for collecting sludge samples (i.e., shovels, compositing buckets, bottles, etc.), then a one-time equipment blank is recommended to be collected with the first sample. An equipment blank sample is

collected by passing laboratory verified PFAS-free water over or through field sampling equipment before the collection of a representative sludge sample. The equipment blank result shall be reported on the annual Sludge Characteristics Form (3400-049) in the comment section when reporting PFAS concentrations in the sludge.

The permittee shall report each of the PFAS sludge monitoring results on the annual Sludge Characteristics and Monitoring Form (3400-049) as provided by the department. The permittee shall also report the summation of PFOS and PFOA on this same form. All results shall be reported in dry weight. The annual Sludge Characteristics and Monitoring Form (3400-049) are due January 31, of the year following the collection of the sludge samples.

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the solids matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., and in accordance with s. NR 149.41, Wis. Adm. Code. The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

4.2.4.9 PFAS Land Application Requirements

The department recommends the landspreading and/or land application of sludge be done in a manner consistent with the most recent version of the [“Interim Strategy for Land Application of Biosolids and Industrial Sludges containing PFAS”](#).

4.2.5 Sampling Point (Outfall) 022 - Class A Thermophilic Digested Liquid

4.2.5.1 Monitoring Requirements

This sample point shall be monitored for Class A List 3 (Pathogens) once every two months. The purpose of this sample point is to meet the requirements of s. NR 204.07(6)(1)1, Wis. Adm. Code, which requires that the fecal coliform density requirements are satisfied immediately after the treatment process is completed. This sample point is not intended to be an outfall for land application or distribution.

Other Sludge Requirements	
Sludge Requirements	Sample Frequency
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	BiMonthly

PATHOGEN CONTROL FOR CLASS A SLUDGE		
The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.		
The following requirements shall be met prior to land application of sludge.		
Parameter	Unit	Limit
Fecal Coliform *	MPN/gTS	1000
OR		
Salmonella	MPN/4gTS	3
AND, ONE OF THE FOLLOWING PROCESS OPTIONS		
Temp/Time based on % Solids	Alkaline Treatment	
Prior test for Enteric Virus/Viable Helminth Ova	Post test for Enteric Virus/Viable Helminth Ova	

PATHOGEN CONTROL FOR CLASS A SLUDGE

The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.

The following requirements shall be met prior to land application of sludge.

Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS	1000
Composting	Heat Drying	
Heat Treatment	Thermophilic Aerobic Digestion	
Beta Ray Irradiation	Gamma Ray Irradiation	
Pasteurization	PFRP Equivalent Process	
* The Fecal Coliform concentration shall be reported as discrete samples on a dry weight basis consistent with 40 CFR 503. Collect 7 samples each sampling period.		

4.2.6 Sampling Point (Outfall) 012 - Struvite Harvesting

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Weight		tons/yr	Annual	Total Annual	Report tons of product produced.
Solids, Total		Percent	Quarterly	Grab	
Fecal Coliform	Daily Max	1,000 MPN/g TS	Quarterly	Grab	

5 Schedules

5.1 Watershed Adaptive Management Option Annual Report Submittals

The permittee shall submit annual reports on the implementation of AM Plan No. AM-2025-02 (September 2025) as specified in Sections 3.2.1.7 and 3.2.1.8 and the following schedule.

Required Action	Due Date
Annual Adaptive Management Report #6: Submit an annual Adaptive Management (AM) report. The annual AM report shall: <ul style="list-style-type: none"> o Identify those actions from Section 3 of the approved adaptive management plan that were completed during the previous calendar year and those actions that are in progress; o Include total phosphorus, total suspended solids and river flow measurements; o Evaluate collected monitoring data; o Document progress in achieving the goals and measures identified in the approved adaptive management plan; o Describe the outreach and education efforts that occurred during the past calendar year; o Identify any corrections or adjustments to the adaptive management plan that are needed to achieve compliance with the phosphorus water quality standards specified in s. NR 102.06, Wis. Adm. Code; o Describe any updates needed to Madison Metropolitan Sewerage District's approved phosphorus optimization plan; o Submit results from all sample points outlined in AM Plan No. AM-2025-02 (September 2025) to the Department using the Department's Laboratory Data Entry System (LDES); and o Submit all biomonitoring results from all locations outlined in AM Plan No. AM-2025-02 (September 2025) to the Department using the Department's Laboratory Data Entry System (LDES). 	07/31/2026
Annual Adaptive Management Report #7: Submit an Adaptive Management report as defined above.	07/31/2027
Annual Adaptive Management Report #8: Submit an Adaptive Management report as defined above.	07/31/2028
Annual Adaptive Management Report #9: Submit an Adaptive Management report as defined above.	07/31/2029
Final Adaptive Management Report for 2nd Permit Term: Submit the final Adaptive Management (AM) report documenting progress made during the second permit term under AM in meeting the watershed phosphorus reduction target of 65,824 lbs/yr, as well as the anticipated future reductions in phosphorus sources and phosphorus effluent concentrations, which shall be measured in accordance with the AM Plan modeling protocols. The report shall summarize AM activities that have been implemented during the current permit term and state which, if any, actions from the approved AM Plan No. AM-2025-02 (September 2025) were not pursued and why. The report shall include an analysis of trends on both a monthly and six-month average basis for concentrations and mass effluent discharged. Additionally, for informational purposes, there shall be an analysis of any improvements to the quality of surface waters in the Adaptive Management Action Area focusing on phosphorus and flow results collected during the permit term. The surface water analysis shall evaluate how the in-stream loadings have changed over the permit term in comparison to implemented AM actions.	07/31/2030

WPDES Permit No. WI-0024597-10-0
MADISON METROPOLITAN SEWERAGE DISTRICT

Renewal of Adaptive Management Plan for Permit Reissuance: If the permittee intends to seek renewal of AM Plan No. AM-2025-02 (September 2025) per s. NR 217.18, Wis. Adm. Code, for the reissued permit term, proposed AM goals and actions based on an updated AM Plan shall be submitted to the Department for review and approval. The permittee may propose to adjust load reductions required by AM Plan No. AM-2025-02 (September 2025) either up or down at the beginning of each WPDES permit term to reflect changes in loads associated with point and nonpoint sources. This schedule may be modified to incorporate any changes in AM goals and actions, removed if the AM program is terminated per the Adaptive Management Reopener Clause section, or removed if the adaptive management plan has achieved water quality standards as determined by the Department within the AM action area.	09/30/2030
Annual Adaptive Management Report #10: Submit an Adaptive Management report as defined above.	07/31/2031
Annual Adaptive Management Report #11: Submit an Adaptive Management report as defined above.	07/31/2032
Annual Adaptive Management Report #12: Submit an Adaptive Management report as defined above.	07/31/2033
Annual Adaptive Management Report #13: Submit an Adaptive Management report as defined above.	07/31/2034
Final Adaptive Management Report for 3rd Permit Term: Submit the final Adaptive Management (AM) report documenting progress made during the second permit term under AM in meeting the watershed phosphorus reduction target of 93,250 lbs/yr, as well as the anticipated future reductions in phosphorus sources and phosphorus effluent concentrations, which shall be measured in accordance with the AM Plan modeling protocols. The report shall summarize AM activities that have been implemented during the current permit term and state which, if any, actions from the approved AM Plan No. AM-2025-02 (September 2025) were not pursued and why. The report shall include an analysis of trends on both a monthly and six-month average basis for concentrations and mass effluent discharged. Additionally, for informational purposes, there shall be an analysis of any improvements to the quality of surface waters in the Adaptive Management Action Area focusing on phosphorus and flow results collected during the permit term. The surface water analysis shall evaluate how the in-stream loadings have changed over the permit term in comparison to implemented AM actions.	07/31/2035
Renewal of Adaptive Management Plan for Permit Reissuance: If the permittee intends to seek renewal of AM Plan No. AM-2025-02 (September 2025) per s. NR 217.18, Wis. Adm. Code, for the reissued permit term, proposed AM goals and actions based on an updated AM Plan shall be submitted to the Department for review and approval. The permittee may propose to adjust load reductions required by AM Plan No. AM-2025-02 (September 2025) either up or down at the beginning of each WPDES permit term to reflect changes in loads associated with point and nonpoint sources. This schedule may be modified to incorporate any changes in AM goals and actions, removed if the AM program is terminated per the Adaptive Management Reopener Clause section, or removed if the adaptive management plan has achieved water quality standards as determined by the Department within the AM action area.	09/30/2035
Annual Adaptive Management Report #14: Submit an Adaptive Management report as defined above.	07/31/2036
Annual Adaptive Management Report #15: Submit an Adaptive Management report as defined above.	07/31/2037

Annual Adaptive Management Report #16: Submit an Adaptive Management report as defined above.	07/31/2038
Annual Adaptive Management Report #17: Submit an Adaptive Management report as defined above.	07/31/2039
Final Adaptive Management Report: Submit the final Adaptive Management (AM) report documenting progress made throughout the AM project in meeting the watershed phosphorus reduction target of 109,706 lbs/yr, and in-stream water quality standards specified in s. NR 102.06, Wis. Adm. Code. The report shall summarize AM activities that have been implemented during the current permit term and state which, if any, actions from the approved AM Plan No. AM-2025-02 (September 2025) were not pursued and why. The report shall include an analysis of trends on both a monthly and six-month average basis for concentrations and mass effluent discharged. Additionally, there should be an analysis of any improvements to the quality of surface waters in the Adaptive Management Action Area focusing on phosphorus and flow results collected during the permit term. The surface water analysis shall evaluate how the in-stream loadings have changed over the permit term in comparison to implemented AM actions.	07/31/2040
Achieve Water Quality Standards and Adaptive Management Plan Success: All the receiving waters identified within the AM Plan No. AM-2025-02 (September 2025) shall be measured for success in accordance with Section IV of the AM Plan. Compliance may be demonstrated using effluent data and watershed modeling that uses similar assumptions as the TMDL to demonstrate that the sum total of the allocations have been achieved for each reach. If some, but not all, reaches are complying with the allocations of the TMDL, only those point sources in the complying reaches will be considered in compliance at the end of the adaptive management period. The permittee shall continue to comply with applicable effluent limits (required under s. NR 217.18(3)(e)3, Wis. Adm. Code, expressed as a 6-month avg and 1.0 mg/L monthly avg) and continue monitoring of surface waters (stream reaches 62-69 per AM-2025-02 (September 2025)) at a minimum of monthly May through October for total phosphorus. If the allocations in the TMDL have been achieved but the applicable phosphorus water quality criterion in s. NR 102.06, Wis. Adm. Code, has not been achieved in the reach for MMSD's outfall to Badfish Creek, consistent with s. 283.13(5), Wis. Stats., and Clean Water Act section 301(b)(1)(C), further evaluation and additional actions will be necessary in the next reissued permit as necessary to achieve phosphorus water quality criterion (e.g., DNR reevaluation of TMDL allocations, imposition of more stringent limits, etc.).	03/31/2041

5.2 Chloride Source Reduction Measures (Target Value)

As a condition of the variance to the water quality-based effluent limitation(s) for chloride granted in accordance with s. NR 106.83(2), Wis. Adm. Code, the permittee shall perform the following actions.

Required Action	Due Date
<p>Annual Chloride Progress Report: Submit an annual chloride progress report related to the source reduction activities for the previous year. The annual chloride progress report shall:</p> <p>Indicate which chloride source reduction measures or activities in the Source Reduction Plan have been implemented and state which, if any, source reduction measures from the Source Reduction Plan were not pursued and why. Include an assessment of whether each implemented source reduction measure appears to be effective or ineffective at reducing pollutant discharge concentrations and identify actions planned for the upcoming year;</p> <p>Include an analysis of trends in weekly, monthly and annual average chloride concentrations and total mass discharge of chloride based on chloride sampling and flow data; and</p> <p>Include an analysis of how effluent chloride varies with time and with significant loadings of</p>	01/31/2027

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chloride. Note that the interim limitation listed in the Surface Water section of this permit remains enforceable until new enforceable limits are established in the next permit issuance. The first annual chloride progress report is to be submitted by the Date Due.	
Annual Chloride Progress Report #2: Submit the chloride progress report, related to the source reduction activities for the previous year, as defined above.	01/31/2028
Annual Chloride Progress Report #3: Submit the chloride progress report, related to the source reduction activities for the previous year, as defined above.	01/31/2029
Annual Chloride Progress Report #4: Submit the chloride progress report, related to the source reduction activities for the previous year, as defined above.	01/31/2030
<p>Final Chloride Report: Submit the final chloride report documenting the success in meeting the chloride target value of 400 mg/L (as a weekly and monthly average), as well as the anticipated future reduction in chloride sources and chloride effluent concentrations.</p> <p>The report shall:</p> <p>Summarize chloride source reduction measures that have been implemented during the current permit term and state which, if any, source reduction measures from the Source Reduction Plan were not pursued and why;</p> <p>Include an assessment of which source reduction measures appear to have been effective or ineffective. Evaluate any needed changes to the pollutant reduction strategy accordingly;</p> <p>Include an analysis of trends in weekly, monthly and annual average chloride concentrations and total mass discharge of chloride based on chloride sampling and flow data during the current permit term; and</p> <p>Include an analysis of how influent and effluent chloride varies with time and with significant loadings of chloride as identified in the source reduction plan.</p> <p>If the permittee intends to reapply for a chloride variance, for the reissued permit, proposed target limits and a detailed source reduction measures plan, outlining the source reduction activities proposed for the upcoming permit term, shall also be included per ss. NR 106.90 (5) and NR 106.83 (4), Wis. Adm. Code. An updated source reduction measures plan shall:</p> <p>Include an explanation of why or how each source reduction measure will result in reduced discharge of the target pollutant; and</p> <p>Evaluate any available information on pollutant sources, timing, and concentration to update the mass balance assumptions and expected sources of the pollutant, and</p> <p>Identify any information needs that would help to better determine pollutant sources and make plans to collect that information.</p> <p>Note that the target value is the benchmark for evaluating the effectiveness of the chloride source reduction measures but is not an enforceable limitation under the terms of this permit.</p>	09/30/2030
Annual Chloride Reports After Permit Expiration: In the event that this permit is not reissued by the date the permit expires the permittee shall continue to submit annual chloride reports for the previous year following the due date of Annual Chloride Progress Reports listed above. Annual Chloride Progress Reports shall include the information as defined above.	

5.3 Mercury Pollutant Minimization Summary

Required Action	Due Date
Final Mercury Report: Submit a report summarizing the mercury pollutant minimization measures implemented during the current permit term and the success in maintaining effluent quality at or below the current concentrations. The report shall include an analysis of trends in quarterly and annual average mercury concentrations and total mass discharge of mercury based on mercury sampling and flow data covering the current permit term. The report shall also include an analysis of how influent and effluent mercury varies with time and with significant loadings of mercury such as loads from industries or collection system maintenance.	09/30/2030

5.4 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan Submittal: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with ch. NR 204, Wis. Adm. Code, by the Due Date. This management plan shall 1) specify information on pretreatment processes (if any); 2) identify land application sites; 3) describe site limitations; 4) address vegetative cover management and removal; 5) specify availability of storage; 6) describe the type of transporting and spreading vehicle(s); 7) specify monitoring procedures; 8) track site loading; 9) address contingency plans for adverse weather and odor/nuisance abatement; and 10) include any other pertinent information. Once approved, all landspreading activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes.	03/31/2027

6 Standard Requirements

Chapter NR 205, Wisconsin Administrative Code: The conditions in ss. NR 205.07(1) and NR 205.07(2), Wis. Adm. Code, are included by reference in this permit. The permittee shall comply with all of these requirements. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in ss. NR 205.07(1) and NR 205.07(2), Wis. Adm. Code.

6.1 Reporting and Monitoring Requirements

6.1.1 Monitoring Results

Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under 'Recording of Results'. This report is to be returned to the Department no later than the date indicated on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

Monitoring results shall be reported on an electronic discharge monitoring report (eDMR). The eDMR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report.

The permittee shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The permittee may monitor more frequently than required for any parameter.

6.1.2 Sampling and Testing Procedures

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code, and completed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. Groundwater sampling shall be performed in accordance with procedures contained in s. NR 140.16, Wis. Adm. Code, and the WDNr publications, Groundwater Sampling Desk Reference (PUBL-DG-037-96) and Groundwater Sampling Field Manual (PUBL-DG-038-96). The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation and/or groundwater standard. If the required level cannot be met by any of the methods available in ch. NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this permit.

6.1.3 Pretreatment Sampling Requirements

Sampling for pretreatment parameters (cadmium, chromium, copper, lead, nickel, zinc, and mercury) shall be done during a day each month when industrial discharges are occurring at normal to maximum levels. The sampling of the influent and effluent for these parameters shall be coordinated. All 24 hour composite samples shall be flow proportional.

6.1.4 Recording of Results

The permittee shall maintain records which provide the following information for each effluent measurement or sample taken:

- The date, exact place, method and time of sampling or measurements;

- The individual who performed the sampling or measurements;
- The date the analysis was performed;
- The individual who performed the analysis;
- The analytical techniques or methods used; and
- The results of the analysis.

6.1.5 Reporting of Monitoring Results

The permittee shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.
- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.
- For purposes of calculating fees under ch. NR 101, Wis. Adm. Code, a reporting limit of 2.0 mg/L for BOD₅ and 2.5 mg/L Total Suspended Solids shall be considered to be limits of quantitation.
- For the purposes of reporting a calculated result, average or a mass discharge value, the permittee may substitute a “0” (zero) for any pollutant concentration that is less than the limit of detection. However, if the effluent limitation is less than the limit of detection, the department may substitute a value other than zero for results less than the limit of detection, after considering the number of monitoring results that are greater than the limit of detection and if warranted when applying appropriate statistical techniques.
- If no discharge occurs through an outfall, flow related parameters (e.g. flow rate, hydraulic application rate, volume, etc.) should be reported as “0” (zero) at the required sample frequency specified for the outfall. For example: if the sample frequency is daily, “0” would be reported for any day during the month that no discharge occurred.

6.1.6 Compliance Maintenance Annual Reports

Compliance Maintenance Annual Reports (CMAR) shall be completed using information obtained over each calendar year regarding the wastewater conveyance and treatment system. The CMAR shall be submitted and certified by the permittee in accordance with ch. NR 208, Wis. Adm. Code, by June 30, each year on an electronic report form provided by the Department.

In the case of a publicly owned treatment works, a resolution shall be passed by the governing body and submitted as part of the CMAR, verifying its review of the report and providing responses as required. Private owners of wastewater treatment works are not required to pass a resolution; but they must provide an Owner Statement and responses as required, as part of the CMAR submittal.

The CMAR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The certification verifies that the electronic report is true, accurate and complete.

6.1.7 Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings or electronic data records for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application. All pertinent sludge information,

including permit application information and other documents specified in this permit or s. NR 204.06(9), Wis. Adm. Code shall be retained for a minimum of 5 years.

6.1.8 Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or correct information to the Department.

6.1.9 Reporting Requirements – Alterations or Additions

The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

- The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source.
- The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification requirement applies to pollutants which are not subject to effluent limitations in the existing permit.
- The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use of disposal sites not reported during the permit application process nor reported pursuant to an approved land application plan. Additional sites may not be used for the land application of sludge until department approval is received.

6.2 System Operating Requirements

6.2.1 Noncompliance Reporting

Sanitary sewer overflows and sewage treatment facility overflows shall be reported according to the 'Sanitary Sewer Overflows and Sewage Treatment Facility Overflows' section of this permit.

The permittee shall report the following types of noncompliance by a telephone call to the Department's regional office within 24 hours after becoming aware of the noncompliance:

- Any noncompliance which may endanger health or the environment;
- Any violation of an effluent limitation resulting from a bypass;
- Any violation of an effluent limitation resulting from an upset; and
- Any violation of a maximum discharge limitation for any of the pollutants listed by the Department in the permit, either for effluent or sludge.

A written report describing the noncompliance shall also be submitted to the Department's regional office within 5 days after the permittee becomes aware of the noncompliance. On a case-by-case basis, the Department may waive the requirement for submittal of a written report within 5 days and instruct the permittee to submit the written report with the next regularly scheduled monitoring report. In either case, the written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

A scheduled bypass approved by the Department under the 'Scheduled Bypass' section of this permit shall not be subject to the reporting required under this section.

NOTE: Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources

immediately of any discharge not authorized by the permit. **The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call DNR's 24-hour HOTLINE at 1-800-943-0003.**

6.2.2 Flow Meters

Flow meters shall be calibrated annually, as per s. NR 218.06, Wis. Adm. Code.

6.2.3 Raw Grit and Screenings

All raw grit and screenings shall be disposed of at a properly licensed solid waste facility or picked up by a licensed waste hauler. If the facility or hauler are located in Wisconsin, then they shall be licensed under chs. NR 500-555, Wis. Adm. Code.

6.2.4 Sludge Management

All sludge management activities shall be conducted in compliance with ch. NR 204 "Domestic Sewage Sludge Management", Wis. Adm. Code.

6.2.5 Prohibited Wastes

Under no circumstances may the introduction of wastes prohibited by s. NR 211.10, Wis. Adm. Code, be allowed into the waste treatment system. Prohibited wastes include those:

- Which create a fire or explosion hazard in the treatment work;
- Which will cause corrosive structural damage to the treatment work;
- Solid or viscous substances in amounts which cause obstructions to the flow in sewers or interference with the proper operation of the treatment work;
- Wastewaters at a flow rate or pollutant loading which are excessive over relatively short time periods so as to cause a loss of treatment efficiency; and
- Changes in discharge volume or composition from contributing industries which overload the treatment works or cause a loss of treatment efficiency.

6.2.6 Bypass

This condition applies only to bypassing at a sewage treatment facility that is not a scheduled bypass, approved blending as a specific condition of this permit, a sewage treatment facility overflow or a controlled diversion as provided in the sections titled 'Scheduled Bypass', 'Blending' (if approved), 'SSO's and Sewage Treatment Facility Overflows' and 'Controlled Diversions' of this permit. Any other bypass at the sewage treatment facility is prohibited and the Department may take enforcement action against a permittee for such occurrences under s. 283.89, Wis. Stats. The Department may approve a bypass if the permittee demonstrates all the following conditions apply:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance. When evaluating feasibility of alternatives, the department may consider factors such as technical achievability, costs and affordability of implementation and risks to public health, the environment and, where the permittee is a municipality, the welfare of the community served; and
- The bypass was reported in accordance with the Noncompliance Reporting section of this permit.

6.2.7 Scheduled Bypass

Whenever the permittee anticipates the need to bypass for purposes of efficient operations and maintenance and the permittee may not meet the conditions for controlled diversions in the ‘Controlled Diversions’ section of this permit, the permittee shall obtain prior written approval from the Department for the scheduled bypass. A permittee’s written request for Department approval of a scheduled bypass shall demonstrate that the conditions for bypassing specified in the above section titled ‘Bypass’ are met and include the proposed date and reason for the bypass, estimated volume and duration of the bypass, alternatives to bypassing and measures to mitigate environmental harm caused by the bypass. The department may require the permittee to provide public notification for a scheduled bypass if it is determined there is significant public interest in the proposed action and may recommend mitigation measures to minimize the impact of such bypass.

6.2.8 Controlled Diversions

Controlled diversions are allowed only when necessary for essential maintenance to assure efficient operation. Sewage treatment facilities that have multiple treatment units to treat variable or seasonal loading conditions may shut down redundant treatment units when necessary for efficient operation. The following requirements shall be met during controlled diversions:

- Effluent from the sewage treatment facility shall meet the effluent limitations established in the permit. Wastewater that is diverted around a treatment unit or treatment process during a controlled diversion shall be recombined with wastewater that is not diverted prior to the effluent sampling location and prior to effluent discharge;
- A controlled diversion does not include blending as defined in s. NR 210.03(2e), Wis. Adm. Code, and as may only be approved under s. NR 210.12. A controlled diversion may not occur during periods of excessive flow or other abnormal wastewater characteristics;
- A controlled diversion may not result in a wastewater treatment facility overflow; and
- All instances of controlled diversions shall be documented in sewage treatment facility records and such records shall be available to the department on request.

6.2.9 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114, Wis. Adm. Code, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

6.2.10 Operator Certification

The wastewater treatment facility shall be under the direct supervision of a state certified operator. In accordance with s. NR 114.53, Wis. Adm. Code, every WPDES permitted treatment plant shall have a designated operator-in-charge holding a current and valid certificate. The designated operator-in-charge shall be certified at the level and in all subclasses of the treatment plant, except laboratory. Treatment plant owners shall notify the department of any changes in the operator-in-charge within 30 days. Note that s. NR 114.52(22), Wis. Adm. Code, lists types of facilities that are excluded from operator certification requirements (i.e. private sewage systems, pretreatment facilities discharging to public sewers, industrial wastewater treatment that consists solely of land disposal, agricultural digesters and concentrated aquatic production facilities with no biological treatment).

6.3 Sewage Collection Systems

6.3.1 Sanitary Sewage Overflows and Sewage Treatment Facility Overflows

6.3.1.1 Overflows Prohibited

Any overflow or discharge of wastewater from the sewage collection system or at the sewage treatment facility, other than from permitted outfalls, is prohibited. The permittee shall provide information on whether any of the following conditions existed when an overflow occurred:

- The sanitary sewer overflow or sewage treatment facility overflow was unavoidable to prevent loss of life, personal injury or severe property damage;
- There were no feasible alternatives to the sanitary sewer overflow or sewage treatment facility overflow such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or preventive maintenance activities;
- The sanitary sewer overflow or the sewage treatment facility overflow was caused by unusual or severe weather-related conditions such as large or successive precipitation events, snowmelt, saturated soil conditions, or severe weather occurring in the area served by the sewage collection system or sewage treatment facility; and
- The sanitary sewer overflow or the sewage treatment facility overflow was unintentional, temporary, and caused by an accident or other factors beyond the reasonable control of the permittee.

6.3.1.2 Permittee Response to Overflows

Whenever a sanitary sewer overflow or sewage treatment facility overflow occurs, the permittee shall take all feasible steps to control or limit the volume of untreated or partially treated wastewater discharged, and terminate the discharge as soon as practicable. Remedial actions, including those in s. NR 210.21 (3), Wis. Adm. Code, shall be implemented consistent with an emergency response plan developed under the CMOM program.

6.3.1.3 Permittee Reporting

Permittees shall report all sanitary sewer overflows and sewage treatment overflows as follows:

- The permittee shall notify the department by telephone, fax or email as soon as practicable, but no later than 24 hours from the time the permittee becomes aware of the overflow;
- The permittee shall, no later than five days from the time the permittee becomes aware of the overflow, provide to the department the information identified in this paragraph using department form number 3400-184. If an overflow lasts for more than five days, an initial report shall be submitted within 5 days as required in this paragraph and an updated report submitted following cessation of the overflow. At a minimum, the following information shall be included in the report:
 - a) The date and location of the overflow;
 - b) The surface water to which the discharge occurred, if any;
 - c) The duration of the overflow and an estimate of the volume of the overflow;
 - d) A description of the sewer system or treatment facility component from which the discharge occurred such as manhole, lift station, constructed overflow pipe, or crack or other opening in a pipe;
 - e) The estimated date and time when the overflow began and stopped or will be stopped;
 - f) The cause or suspected cause of the overflow including, if appropriate, precipitation, runoff conditions, areas of flooding, soil moisture and other relevant information;
 - g) Steps taken or planned to reduce, eliminate and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
 - h) A description of the actual or potential for human exposure and contact with the wastewater from the overflow;

- i) Steps taken or planned to mitigate the impacts of the overflow and a schedule of major milestones for those steps;
- j) To the extent known at the time of reporting, the number and location of building backups caused by excessive flow or other hydraulic constraints in the sewage collection system that occurred concurrently with the sanitary sewer overflow and that were within the same area of the sewage collection system as the sanitary sewer overflow; and
- k) The reason the overflow occurred or explanation of other contributing circumstances that resulted in the overflow event. This includes any information available including whether the overflow was unavoidable to prevent loss of life, personal injury, or severe property damage and whether there were feasible alternatives to the overflow.

NOTE: A copy of form 3400-184 for reporting sanitary sewer overflows and sewage treatment facility overflows may be obtained from the department or accessed on the department's web site at <http://dnr.wi.gov/topic/wastewater/SSOreport.html>. As indicated on the form, additional information may be submitted to supplement the information required by the form.

- The permittee shall identify each specific location and each day on which a sanitary sewer overflow or sewage treatment facility overflow occurs as a discrete sanitary sewer overflow or sewage treatment facility overflow occurrence. An occurrence may be more than one day if the circumstances causing the sanitary sewer overflow or sewage treatment facility overflow results in a discharge duration of greater than 24 hours. If there is a stop and restart of the overflow at the same location within 24 hours and the overflow is caused by the same circumstance, it may be reported as one occurrence. Sanitary sewer overflow occurrences at a specific location that are separated by more than 24 hours shall be reported as separate occurrences; and
- A permittee that is required to submit wastewater discharge monitoring reports under s. NR 205.07 (1) (r), Wis. Adm. Code, shall also report all sanitary sewer overflows and sewage treatment facility overflows on that report.

6.3.1.4 Public Notification

The permittee shall notify the public of any sanitary sewer and sewage treatment facility overflows consistent with its emergency response plan required under the CMOM (Capacity, Management, Operation and Maintenance) section of this permit and s. NR 210.23 (4) (f), Wis. Adm. Code. Such public notification shall occur promptly following any overflow event using the most effective and efficient communications available in the community. At minimum, a daily newspaper of general circulation in the county(s) and municipality whose waters may be affected by the overflow shall be notified by written or electronic communication.

6.3.2 Capacity, Management, Operation and Maintenance (CMOM) Program

- The permittee shall have written documentation of the Capacity, Management, Operation and Maintenance (CMOM) program components in accordance with s. NR 210.23(4), Wis. Adm. Code. Such documentation shall be available for Department review upon request. The Department may request that the permittee provide this documentation or prepare a summary of the permittee's CMOM program at the time of application for reissuance of the WPDES permit.
- The permittee shall implement a CMOM program in accordance with s. NR 210.23, Wis. Adm. Code.
- The permittee shall at least annually conduct a self-audit of activities conducted under the permittee's CMOM program to ensure CMOM components are being implemented as necessary to meet the general standards of s. NR 210.23(3), Wis. Adm. Code.

6.3.3 Sewer Cleaning Debris and Materials

All debris and material removed from cleaning sanitary sewers shall be managed to prevent nuisances, run-off, ground infiltration or prohibited discharges.

- Debris and solid waste shall be dewatered, dried and then disposed of at a licensed solid waste facility.

- Liquid waste from the cleaning and dewatering operations shall be collected and disposed of at a permitted wastewater treatment facility.
- Combination waste including liquid waste along with debris and solid waste may be disposed of at a licensed solid waste facility or wastewater treatment facility willing to accept the waste.

6.4 Surface Water Requirements

6.4.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit

For pollutants with water quality-based effluent limits below the Limit of Quantitation (LOQ) in this permit, the LOQ calculated by the permittee and reported on the Discharge Monitoring Reports (DMRs) is incorporated by reference into this permit. The LOQ shall be reported on the DMRs, shall be the lowest quantifiable level practicable, and shall be no greater than the minimum level (ML) specified in or approved under 40 CFR Part 136 for the pollutant at the time this permit was issued, unless this permit specifies a higher LOQ.

6.4.2 Appropriate Formulas for Effluent Calculations

The permittee shall use the following formulas for calculating effluent results to determine compliance with average concentration limits and mass limits and total load limits:

Weekly/Monthly/Six-Month/Annual Average Concentration = the sum of all daily results for that week/month/six-month/year, divided by the number of results during that time period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April, except in cases of Water Quality Trading, wherein the applicable periods are January through June and July through December.]

Weekly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the week.

Monthly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the month.

Six-Month Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the six-month period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Annual Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the entire year.

Total Monthly Discharge: = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

Total Annual Discharge: = sum of total monthly discharges for the calendar year.

12-Month Rolling Sum of Total Monthly Discharge: = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

6.4.3 Effluent Temperature Requirements

Weekly Average Temperature – If temperature limits are included in this permit, Weekly Average Temperature shall be calculated as the sum of all daily maximum results for that week divided by the number of daily maximum results during that time period.

Cold Shock Standard – Water temperatures of the discharge shall be controlled in a manner as to protect fish and aquatic life uses from the deleterious effects of cold shock pursuant to Wis. Adm. Code, s. NR 102.28. ‘Cold Shock’ means exposure of aquatic organisms to a rapid decrease in temperature and a sustained exposure to low temperature that induces abnormal behavior or physiological performance and may lead to death.

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Rate of Temperature Change Standard – Temperature of a water of the state or discharge to a water of the state may not be artificially raised or lowered at such a rate that it causes detrimental health or reproductive effects to fish or aquatic life of the water of the state pursuant to Wis. Adm. Code, s. NR 102.29.

6.4.4 Visible Foam or Floating Solids

There shall be no discharge of floating solids or visible foam in other than trace amounts.

6.4.5 Surface Water Uses and Criteria

In accordance with NR 102.04, Wis. Adm. Code, surface water uses and criteria are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all surface waters including the mixing zone meet the following conditions at all times and under all flow and water level conditions:

- Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.
- Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.
- Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.
- Substances in concentrations or in combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

6.4.6 Percent Removal

During any 30 consecutive days, the average effluent concentrations of BOD₅ and of total suspended solids shall not exceed 15% of the average influent concentrations, respectively. This requirement does not apply to removal of total suspended solids if the permittee operates a lagoon system and has received a variance for suspended solids granted under NR 210.07(2), Wis. Adm. Code.

6.4.7 *E. coli*

The monthly limit for *E. coli* shall be expressed as a geometric mean. In calculating the geometric mean, a value of 1 is used for any result of 0.

6.4.8 Seasonal Disinfection

Disinfection shall be provided from March 1 through November 30 of each year. Monitoring requirements and the limitations for *E. coli* apply only during the period in which disinfection is required. Whenever chlorine is used for disinfection or other uses, the limitations and monitoring requirements for residual chlorine shall apply. A dechlorination process shall be in operation whenever chlorine is used.

6.4.9 Whole Effluent Toxicity (WET) Monitoring Requirements

In order to determine the potential impact of the discharge on aquatic organisms, static-renewal toxicity tests shall be performed on the effluent in accordance with the procedures specified in the "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*" (PUB-WT-797, November 2004) as required by NR 219.04, Table A, Wis. Adm. Code). All of the WET tests required in this permit, including any required retests, shall be conducted on the *Ceriodaphnia dubia* and fathead minnow species. Receiving water samples shall not be collected from any point in contact with the permittee's mixing zone and every attempt shall be made to avoid contact with any other discharge's mixing zone.

6.4.10 Whole Effluent Toxicity (WET) Identification and Reduction

Within 60 days of a retest which showed positive results, the permittee shall submit a written report to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., PO Box 7921, Madison, WI 53707-7921, which details the following:

- A description of actions the permittee has taken or will take to remove toxicity and to prevent the recurrence of toxicity;
- A description of toxicity reduction evaluation (TRE) investigations that have been or will be done to identify potential sources of toxicity, including the following actions:
 - a) Evaluate the performance of the treatment system to identify deficiencies contributing to effluent toxicity (e.g., operational problems, chemical additives, incomplete treatment)
 - b) Identify the compound(s) causing toxicity. Conduct toxicity screening tests on the effluent at a minimum of once per month for six months to determine if toxicity recurs. Screening tests are WET tests using fewer effluent concentrations conducted on the most sensitive species. If any of the screening tests contain toxicity, conduct a toxicity identification evaluation (TIE) to determine the cause. TIE methods are available from USEPA “Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures (EPA/600/6-91/003) and “Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I” (EPA/600/6-91/005F).
 - c) Trace the compound(s) causing toxicity to their sources (e.g., industrial, commercial, domestic)
 - d) Evaluate, select, and implement methods or technologies to control effluent toxicity (e.g., in-plant or pretreatment controls, source reduction or removal)
- Where corrective actions including a TRE have not been completed, an expeditious schedule under which corrective actions will be implemented;
- If no actions have been taken, the reason for not taking action.

The permittee may also request approval from the Department to postpone additional retests in order to investigate the source(s) of toxicity. Postponed retests must be completed after toxicity is believed to have been removed.

6.4.11 Reopener Clause

Pursuant to s. 283.15(11), Wis. Stat. and 40 CFR 131.20, the Department may modify or revoke and reissue this permit if, through the triennial standard review process, the Department determines that the terms and conditions of this permit need to be updated to reflect the highest attainable condition of the receiving water.

6.4.12 PFOS and PFOA Requirements

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the aqueous matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., in accordance with s. NR 149.41, Wis. Adm. Code. All laboratories are required to utilize EPA Method 1633A for sampling PFAS in sludge.

The Department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

6.5 Pretreatment Program Requirements

The permittee is required to operate an industrial pretreatment program as described in the program initially approved by the Department of Natural Resources including any subsequent program modifications approved by the Department, and including commitments to program implementation activities provided in the permittee's annual pretreatment program report, and that complies with the requirements set forth in 40 CFR Part 403 and ch. NR 211,

Wis. Adm. Code. To ensure that the program is operated in accordance with these requirements, the following general conditions and requirements are hereby established:

6.5.1 Inventories

The permittee shall implement methods to maintain a current inventory of the general character and volume of wastewater that industrial users discharge to the treatment works and shall provide an updated industrial user listing annually and report any changes in the listing to the Department by March 31 of each year as part of the annual pretreatment program report required herein.

6.5.2 Regulation of Industrial Users

6.5.2.1 Limitations for Industrial Users:

The permittee shall develop, maintain, enforce and revise as necessary local limits to implement the general and specific prohibitions of the state and federal General Pretreatment Regulations.

6.5.2.2 Control Documents for Industrial Users (IUs)

The permittee shall control the discharge from each significant industrial user through individual discharge permits as required by s. NR 211.235, Wis. Adm. Code and in accordance with the approved pretreatment program procedures and the permittee's sewer use ordinance. The discharge permits shall be modified in a timely manner during the stated term of the discharge permits according to the sewer use ordinance as conditions warrant. The discharge permits shall include at a minimum the elements found in s. NR 211.235(1), Wis. Adm. Code and references to the approved pretreatment program procedures and the sewer use ordinance.

6.5.2.3 Review of Industrial User Reports, Inspections and Compliance Monitoring

The permittee shall require the submission of, receive, and review self-monitoring reports and other notices from industrial users in accordance with the approved pretreatment program procedures. The permittee shall randomly sample and analyze industrial user discharges and conduct surveillance activities to determine independent of information supplied by the industrial users, whether the industrial users are in compliance with pretreatment standards and requirements. The inspections and monitoring shall also be conducted to maintain accurate knowledge of local industrial processes, including changes in the discharge, pretreatment equipment operation, spill prevention control plans, slug control plans, and implementation of solvent management plans.

The permittee shall inspect and sample the discharge from each significant industrial user as specified in the permittee's approved pretreatment program or as specified in NR 211.235(3). The permittee shall evaluate whether industrial users identified as significant need a slug control plan according to the requirements of NR 211.235(4). If a slug control plan is needed, the plan shall contain at a minimum the elements specified in s. NR 211.235(4)(b), Wis. Adm. Code.

6.5.2.4 Enforcement and Industrial User Compliance Evaluation & Violation Reports

The permittee shall enforce the industrial pretreatment requirements including the industrial user discharge limitations of the permittee's sewer use ordinance. The permittee shall investigate instances of noncompliance by collecting and analyzing samples and collecting other information with sufficient care to produce evidence admissible in enforcement proceedings or in judicial actions. Investigation and response to instances of noncompliance shall be in accordance with the permittee's sewer use ordinance and approved Enforcement Response Plan.

The permittee shall make a semiannual report on forms provided or approved by the Department. The semiannual report shall include an analysis of industrial user significant noncompliance (i.e. the Industrial User Compliance Evaluation, also known as the SNC Analysis) as outlined in s. NR 211.23(1)(j), Wis. Adm. Code, and a summary of the permittee's response to all industrial noncompliance (i.e. the Industrial User Violation Report). The Industrial User Compliance Evaluation Report shall include monitoring results received from industrial users pursuant to s. NR 211.15(1)-(5), Wis. Adm. Code. The Industrial User Violation Report shall include copies of all notices of noncompliance, notices of violation and other enforcement correspondence sent by the permittee to industrial users,

together with the industrial user's response. The Industrial User Compliance Evaluation and Violation Reports for the period January through June shall be provided to the Department by September 30 of each year and for the period July through December shall be provided to the Department by March 31 of the succeeding year, unless alternate submittal dates are approved.

6.5.2.5 Publication of Violations

The permittee shall publish a list of industrial users that have significantly violated the municipal sewer use ordinance during the calendar year, in the largest daily newspaper in the area by March 31 of the following year pursuant to s. NR 211.23(1)(j), Wis. Adm. Code. A copy of the newspaper publication shall be provided as part of the annual pretreatment report specified herein.

6.5.2.6 Multijurisdictional Agreements

The permittee shall establish agreements with all contributing jurisdictions as necessary to ensure compliance with pretreatment standards and requirements by all industrial users discharging to the permittee's wastewater treatment system. Any such agreement shall identify who will be responsible for maintaining the industrial user inventory, issuance of industrial user control mechanisms, inspections and sampling, pretreatment program implementation, and enforcement.

6.5.3 Annual Pretreatment Program Report

The permittee shall evaluate the pretreatment program, and submit the Pretreatment Program Report to the Department on forms provided or approved by the Department by March 31 annually, unless an alternate submittal date is approved. The report shall include a brief summary of the work performed during the preceding calendar year, including the numbers of discharge permits issued and in effect, pollution prevention activities, number of inspections and monitoring surveys conducted, budget and personnel assigned to the program, a general discussion of program progress in meeting the objectives of the permittee's pretreatment program together with summary comments and recommendations.

6.5.4 Pretreatment Program Modifications

- **Future Modifications:** The permittee shall within one year of any revisions to federal or state General Pretreatment Regulations submit an application to the Department in duplicate to modify and update its approved pretreatment program to incorporate such regulatory changes as applicable to the permittee. Additionally, the Department or the permittee may request an application for program modification at any time where necessary to improve program effectiveness based on program experience to date.
- **Modifications Subject to Department Approval:** The permittee shall submit all proposed pretreatment program modifications to the Department for determination of significance and opportunity for comment in accordance with the requirements and conditions of s. NR 211.27, Wis. Adm. Code. Any substantial proposed program modification shall be subject to Department public noticing and formal approval prior to implementation. A substantial program modification includes, but is not limited to, changes in enabling legal authority to administer and enforce pretreatment conditions and requirements; significant changes in program administrative or operational procedures; significant reductions in monitoring frequencies; significant reductions in program resources including personnel commitments, equipment, and funding levels; changes (including any relaxation) in the local limitations for substances enforced and applied to users of the sewerage treatment works; changes in treatment works sludge disposal or management practices which impact the pretreatment program; or program modifications which increase pollutant loadings to the treatment works. The Department shall use the procedures outlined in s. NR 211.30, Wis. Adm. Code for review and approval/denial of proposed pretreatment program modifications. The permittee shall comply with local public participation requirements when implementing the pretreatment program.

6.5.5 Program Resources

The permittee shall have sufficient resources and qualified personnel to carry out the pretreatment program responsibilities as listed in ss. NR 211.22 and NR 211.23, Wis. Adm. Code.

6.6 Land Application Requirements

6.6.1 Sludge Management Program Standards And Requirements Based Upon Federally Promulgated Regulations

In the event that new federal sewage sludge standards or regulations are promulgated, the permittee shall comply with the new sewage sludge requirements by the dates established in the regulations, if required by federal law, even if the permit has not yet been modified to incorporate the new federal regulations.

6.6.2 General Sludge Management Information

The General Sludge Management Form 3400-48 shall be completed and submitted prior to any significant sludge management changes.

6.6.3 Sludge Samples

All sludge samples shall be collected at a point and in a manner which will yield sample results which are representative of the sludge being tested, and collected at the time which is appropriate for the specific test.

6.6.4 Land Application Characteristic Report

Each report shall consist of a Characteristic Form 3400-49 and Lab Report. The Characteristic Report Form 3400-49 shall be submitted electronically by January 31 following each year whether or not samples are analyzed. In years in which monitoring does not occur, the report shall be completed by checking on the form that monitoring/land application did not occur.

Following submittal of the electronic Characteristic Report Form 3400-49, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report is true, accurate and complete. The Lab Report must be sent directly to the facility's DNR sludge representative or basin engineer unless approval for not submitting the lab reports has been given.

The permittee shall use the following convention when reporting sludge monitoring results: Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 1.0 mg/kg, report the pollutant concentration as < 1.0 mg/kg .

All results shall be reported on a dry weight basis.

6.6.5 Calculation of Water Extractable Phosphorus

When sludge analysis for Water Extractable Phosphorus is required by this permit, the permittee shall use the following formula to calculate and report Water Extractable Phosphorus:

Water Extractable Phosphorus (% of Total P) =

$$[\text{Water Extractable Phosphorus (mg/kg, dry wt)} \div \text{Total Phosphorus (mg/kg, dry wt)}] \times 100$$

6.6.6 Monitoring and Calculating PCB Concentrations in Sludge

When sludge analysis for "PCB, Total Dry Wt" is required by this permit, the PCB concentration in the sludge shall be determined using either congener-specific analysis or Aroclor analysis. The permittee may decide which of these analyses is performed. Analyses shall be performed in accordance with the following provisions and Table EM in s. NR 219.04, Wis. Adm. Code:

- If congener-specific analysis is employed: All PCB congeners shall be delineated. Non-detects shall be treated as zero. The values that are between the limit of detection (LOD) and the limit of quantitation shall be used when calculating the total value of all congeners. All results shall be added together and the total PCB concentration by dry weight reported.
- If Aroclor analysis is employed, reporting protocols, consistent with s. NR 106.07(6)(e), should be as follows: If all Aroclors are less than the LOD, then the Total PCB Dry Wt result should be reported as less than the highest LOD. If a single Aroclor is detected, then that is what should be reported for the Total PCB result. If multiple Aroclors are detected, they should be summed and reported as Total PCBs. If the LOD cannot be achieved after using the appropriate clean up techniques, a reporting limit that is achievable for the Aroclors or each congener for the sample shall be determined. This reporting limit shall be reported and qualified indicating the presence of an interference.

6.6.7 Annual Land Application Report

Land Application Report Form 3400-55 shall be submitted electronically by January 31, each year whether or not non-exceptional quality sludge is land applied. Non-exceptional quality sludge is defined in s. NR 204.07(4), Wis. Adm. Code. Following submittal of the electronic Annual Land Application Report Form 3400-55, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

6.6.8 Other Methods of Disposal or Distribution Report

The permittee shall submit electronically the Other Methods of Disposal or Distribution Report Form 3400-52 by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied. Following submittal of the electronic Report Form 3400-52, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

6.6.9 Approval to Land Apply

Bulk non-exceptional quality sludge as defined in s. NR 204.07(4), Wis. Adm. Code, may not be applied to land without a written approval letter or Form 3400-122 from the Department unless the Permittee has obtained permission from the Department to self-approve sites in accordance with s. NR 204.06(6), Wis. Adm. Code. Analysis of sludge characteristics is required prior to land application. Application on frozen or snow-covered ground is restricted to the extent specified in s. NR 204.07(3)(1), Wis. Adm. Code.

6.6.10 Soil Analysis Requirements

Each site requested for approval for land application must have the soil tested prior to use. Each approved site used for land application must subsequently be soil tested such that there is at least one valid soil test in the four years prior to land application. All soil sampling and submittal of information to the testing laboratory shall be done in accordance with UW Extension Bulletin A-2100. The testing shall be done by the UW Soils Lab in Madison or Marshfield, WI or at a lab approved by UW. The test results including the crop recommendations shall be submitted to the DNR contact listed for this permit, as they are available. Application rates shall be determined based on the crop nitrogen recommendations and with consideration for other sources of nitrogen applied to the site.

6.6.11 Land Application Site Evaluation

For non-exceptional quality sludge, as defined in s. NR 204.07(4), Wis. Adm. Code, a Land Application Site Request Form 3400-053 shall be submitted to the Department for the proposed land application site. The Department will

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evaluate the proposed site for acceptability and will either approve or deny use of the proposed site. The permittee may obtain permission to approve their own sites in accordance with s. NR 204.06(6), Wis. Adm. Code.

6.6.12 Class A Sludge: Fecal Coliform Density Requirement

The fecal coliform density which must be < 1000 MPN/g TS as required in s. NR 204.07, Wis. Adm. Code, shall be satisfied immediately after the treatment process is completed. If the material is bagged or distributed at that time, no re-testing is required. If the material is bagged, distributed or land applied at a later time, the sludge shall be re-tested and this requirement satisfied at that time also, to ensure that regrowth of bacteria has not occurred. See Municipal Wastewater Sludge Guidance Memo #3 (Fecal Coliform Monitoring - Sampling and Analytical Procedures).

6.6.13 Class A Sludge: Temperature/Time Process

An increased sewage sludge temperature shall be maintained for a prescribed period of time according to the following guidelines:

TOTAL SOLIDS	TEMP	TIME	EQUATION Where: D = time in days t = temp in °C	NOTES
≥7%	≥50° C	≥20 min.	$D = \frac{131,700,000}{10^{0.14t}}$	No heating of small particles by warmed gases or immiscible liquid.
≥7%	≥50° C	≥15 sec.	$D = \frac{131,700,000}{10^{0.14t}}$	Small particles heated by warmed gases or immiscible liquid.
<7%	>50° C	≥15 sec. To <30 min.	$D = \frac{131,700,000}{10^{0.14t}}$	
<7%	≥50° C	≥30 min.	$D = \frac{50,070,000}{10^{0.14t}}$	

In no case shall temperatures calculated using the appropriate equation be less than 50°C.

6.6.14 Class A Sludge: Composting Process

Compost the sludge using either within-vessel or static aerated pile composting methods and maintain the temperature of the sludge at 55° C or higher for 3 days, or compost the sludge using windrow composting methods and maintain the temperature of the sewage sludge at 55° C or higher for 15 days or longer. During this period, a minimum of 5 windrow turnings are required.

6.6.15 Class B Sludge: Fecal Coliform Limitation

Compliance with the fecal coliform limitation for Class B sludge shall be demonstrated by calculating the geometric mean of at least 7 separate samples. (Note that a Total Solids analysis must be done on each sample). The geometric mean shall be less than 2,000,000 MPN or CFU/g TS. Calculation of the geometric mean can be done using one of the following 2 methods.

Method 1:

$$\text{Geometric Mean} = (X_1 \times X_2 \times X_3 \dots \times X_n)^{1/n}$$

Where X = Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Method 2:

$$\text{Geometric Mean} = \text{antilog}[(X_1 + X_2 + X_3 \dots + X_n) \div n]$$

Where X = log₁₀ of Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Example for Method 2

Sample Number	Coliform Density of Sludge Sample	log ₁₀
---------------	-----------------------------------	-------------------

1	6.0×10^5	5.78
2	4.2×10^6	6.62
3	1.6×10^6	6.20
4	9.0×10^5	5.95
5	4.0×10^5	5.60
6	1.0×10^6	6.00
7	5.1×10^5	5.71

The geometric mean for the seven samples is determined by averaging the \log_{10} values of the coliform density and taking the antilog of that value.

$$(5.78 + 6.62 + 6.20 + 5.95 + 5.60 + 6.00 + 5.71) \div 7 = 5.98$$

The antilog of 5.98 = 9.5×10^5

6.6.16 Class B Sludge: Composting

Compost the sludge using either within-vessel, static aerated pile or windrow composting methods and raise the temperature of the sludge to 40° C or higher for 5 days. For 4 hours at some point during each of the 5 days, the temperature in the compost pile shall exceed 55°C.

6.6.17 Vector Control: Volatile Solids Reduction

The mass of volatile solids in the sludge shall be reduced by a minimum of 38% between the time the sludge enters the digestion process and the time it either exits the digester or a storage facility. For calculation of volatile solids reduction, the permittee shall use the Van Kleeck equation or one of the other methods described in "Determination of Volatile Solids Reduction in Digestion" by J.B. Farrell, which is Appendix C of EPA's *Control of Pathogens in Municipal Wastewater Sludge* (EPA/625/R-92/013). The Van Kleeck equation is:

$$\text{VSR}\% = \frac{\text{VS}_{\text{IN}} - \text{VS}_{\text{OUT}}}{\text{VS}_{\text{IN}} - (\text{VS}_{\text{OUT}} \times \text{VS}_{\text{IN}})} \times 100$$

Where: VS_{IN} = Volatile Solids in Feed Sludge (g VS/g TS)

VS_{OUT} = Volatile Solids in Final Sludge (g VS/g TS)

VSR% = Volatile Solids Reduction, (Percent)

6.6.18 Class B Sludge - Vector Control: Injection

No significant amount of the sewage sludge shall be present on the land surface within one hour after the sludge is injected.

6.6.19 Class A Sludge - Vector Control: Incorporation

Class A sludge shall be surface applied within 8 hours after being discharged from a pathogen treatment process and then be incorporated within 6 hours of surface application.

6.6.20 Class B Sludge - Vector Control: Incorporation

Class B sludge shall be incorporated within 6 hours of surface application, or as approved by the Department.

7 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #6	July 31, 2026	34
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #7	July 31, 2027	34
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #8	July 31, 2028	34
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #9	July 31, 2029	34
Watershed Adaptive Management Option Annual Report Submittals -Final Adaptive Management Report for 2nd Permit Term	July 31, 2030	34
Watershed Adaptive Management Option Annual Report Submittals - Renewal of Adaptive Management Plan for Permit Reissuance	September 30, 2030	35
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #10	July 31, 2031	35
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #11	July 31, 2032	35
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #12	July 31, 2033	35
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #13	July 31, 2034	35
Watershed Adaptive Management Option Annual Report Submittals -Final Adaptive Management Report for 3rd Permit Term	July 31, 2035	35
Watershed Adaptive Management Option Annual Report Submittals - Renewal of Adaptive Management Plan for Permit Reissuance	September 30, 2035	35
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #14	July 31, 2036	35
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #15	July 31, 2037	35
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #16	July 31, 2038	36
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #17	July 31, 2039	36
Watershed Adaptive Management Option Annual Report Submittals -Final Adaptive Management Report	July 31, 2040	36
Watershed Adaptive Management Option Annual Report Submittals - Achieve Water Quality Standards and Adaptive Management Plan Success	March 31, 2041	36
Chloride Source Reduction Measures (Target Value) -Annual Chloride Progress Report	January 31, 2027	36

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Chloride Source Reduction Measures (Target Value) -Annual Chloride Progress Report #2	January 31, 2028	37
Chloride Source Reduction Measures (Target Value) -Annual Chloride Progress Report #3	January 31, 2029	37
Chloride Source Reduction Measures (Target Value) -Annual Chloride Progress Report #4	January 31, 2030	37
Chloride Source Reduction Measures (Target Value) -Final Chloride Report	September 30, 2030	37
Chloride Source Reduction Measures (Target Value) -Annual Chloride Reports After Permit Expiration	See Permit	37
Mercury Pollutant Minimization Summary -Final Mercury Report	September 30, 2030	38
Land Application Management Plan -Land Application Management Plan Submittal	March 31, 2027	38
Compliance Maintenance Annual Reports (CMAR)	by June 30, each year	40
Industrial User Compliance Evaluation and Violation Reports	Semiannual	50
Pretreatment Program Report	Annually	50
General Sludge Management Form 3400-48	prior to any significant sludge management changes	51
Characteristic Form 3400-49 and Lab Report	by January 31 following each year whether or not samples are analyzed	51
Land Application Report Form 3400-55	by January 31, each year whether or not non-exceptional quality sludge is land applied	52
Other Methods of Disposal or Distribution Report Form 3400-52	by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied	52
Wastewater Discharge Monitoring Report	no later than the date indicated on the form	39

Report forms shall be submitted electronically in accordance with the reporting requirements herein. Any facility plans or plans and specifications for municipal, industrial, industrial pretreatment and non industrial wastewater systems shall be submitted to the Bureau of Water Quality, P.O. Box 7921, Madison, WI 53707-7921. All other submittals required by this permit shall be submitted to:
South Central Region, 3911 Fish Hatchery Rd, Fitchburg, WI 53711-5397